Win an R7500 Lite

The best-selling RISC OS magazine in the world

# ACORN USER




**NO DISC THIS MONTH!**

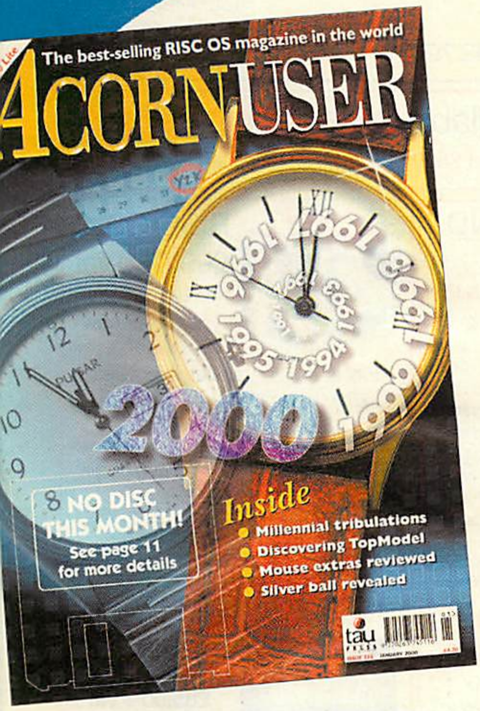
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- Silver ball revealed

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January 2000

ACORN USER

## Reviews





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## Regulars



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**February issue on sale 20th January**

# CTA DIRECT

Curriculum Training Associates
Dept. 01 168 Elliott St.
Tyldesley
Gtr. Manchester
M29 8DS

EMAIL: sales@cta.u-net.com http://www.cta.u-net.com Tel - 01942 797777 Fax - 01942 797711

SWITCH VISA Access DELTA

## 0% Interest FREE credit (6 months) or LOW cost finance available on all new systems.

includes peripherals, software and 2/3 yr optional warranties (minimum spend £800 inc Vat)

## RiscStation
Risc Based Technologies

### RiscStation neTWORX



50 mip Arm7500 system built in Midi,
3D sound, & sampler,
10baseT port,
High speed serial
High speed parallel
RISCOS 4
Software Bundle

| | |
|---|---|
| Networx base only | £399 + Vat (£468.83) |
| Networx 14" system | £479 + Vat (£562.83) |
| Networx 15" system | £499 + Vat (£586.33) |
| Networx 17" system | £549 + Vat (£645.08) |
| Networx 19" system | £649 + Vat (£762.58) |

See www.riscstation.co.uk for more details

### RiscStation R7500



R7500 Lite system built in Midi,
3D sound & sampler,
10baseT port,
High speed serial
High speed parallel ports, RISC OS 4
Major Software Bundle

| | |
|---|---|
| Base only | £499 + Vat (£586.33) |
| 14" monitor system | £579 + Vat (£680.33) |
| 15" monitor system | £599 + Vat (£703.83) |
| 17" monitor system | £649 + Vat (£762.58) |
| 19" monitor system | £749 + Vat (£880.08) |

See www.riscstation.co.uk for more

### SA233"T" Web Wizard

£1145 + VAT (inc. RiscOS 4)



34Mb/8G/DvdCD as CD Rom/17" mon/ Stereo Spk, Ant Internet & Jarva with a 56K modem for only

On L.C.F. for only £34.00 / month

### 233Mhz SA RiscPC

from £850 inc VAT or £22.00 / month via L.C.F. * & we will match or beat your best offer

We can supply any combination or configuration you require.

### A7000 + Series Machines

A7000+ Classic 29 Mips RO3.7 8M / 1G HD /no CD £449.00 (£527.58)

A7000+ Classic 29 Mips RO3.7 16M / 2G HD / 24x CD £499.00 (£586.33)

A7000+ Odyssey NETWORK
50 Mips RO3.7 (4.0) 16M £525.00 (£616.88)

A7000+ Odyssey CD
50 Mips RO3.7 (4.0) 16M / 4G HD /40x CD £549.00 (£645.08)

A7000+ Odyssey Primary or Sec. Pack
50 Mips RO3.7 (4.0) 16M / 4G HD /40x CD £599.00 (£703.83)

A7000 + Odyssey Surf
50 Mips RO3.7 (4.0) 16M / 4G HD /DVD £699.00 (£821.33)

Above prices do not include monitors please see separate price list

## 600 DPI Colour Laser



Only £995 + VAT (£1169.13)

## BEST PRINTER PRICES

( Please ring for latest prices )

| | | Ex VAT | Inc VAT |
|---|---|---|---|
| Canon BJC 1000 colour | A4 | £77.00 | £90.48 |
| Canon BJC 2000 colour # | A4 | £89.00 | £104.57 |
| Canon BJC 2000 Scan # ! | A4 | £158.00 | £185.65 |
| Canon BJC 4650 colour # | A3 | £228.00 | £267.90 |
| Canon BJC 4650 Scan # ! | A3 | £275.00 | £323.12 |
| Canon BJC 7000 colour # | A4 | £169.00 | £198.58 |
| Epson Stylus 440 colour | A4 | £85.00 | £99.87 |
| Epson Stylus 660 colour | A4 | £99.00 | £116.32 |
| Epson Stylus 850 colour | A4 | £165.00 | £193.87 |
| Epson Stylus 1520 colour | A3 | £350.00 | £411.25 |
| Epson Stylus Photo 750 ?# | A4 | £135.00 | £158.62 |
| Epson Stylus Photo EX # | A3 | £235.00 | £276.12 |
| HP 610C colour | A4 | £69.00 | £81.08 |
| HP 895CXI colour | A4 | £200.00 | £235.00 |
| HP LASERJET 1100 | | £249.00 | £292.57 |
| HP LASERJET 2100 PCL | | £454.00 | £533.45 |
| HP LASERJET 2100 PS | | £514.00 | £603.95 |
| Photo drivers for # | | £58.72 | £69.00 |
| Scanner drivers for ! | | £29.79 | £35.00 |

***FREE Acorn driver by request***

## MONITORS

All monitors inc 3 yrs wty unless specified

| | Ex VAT | Inc VAT |
|---|---|---|
| 14" SVGA 0.28 (3yr on-site) | £79.00 | £92.83 |
| 14" SVGA 0.28 Multi-Media | £99.00 | £116.32 |
| 15" SVGA 0.28 (3yr on-site) | £95.00 | £111.62 |
| 15" SVGA 0.28 Multi-Media | £119.00 | £139.83 |
| 17" SVGA 0.28 (1yr RTB) | £127.65 | £149.99 |
| 17" SVGA 0.28 (3yr on-site) | £149.00 | £175.08 |
| *17" SVGA 0.28 m-media(3yr)* | *£169.00* | £198.58 |
| 19" SVGA 0.26 (3yr on-site) | £249.00 | £292.57 |
| 21" SVGA 0.25 (3yr on-site) | £540.00 | £634.50 |
| 38" SVGA M-M (1yr on-site) | £1445.00 | £1697.88 |
| **15" Iiyama Vision Master 350** | **£125.00** | £146.87 |
| **17" Iiyama Vision Master FST** | **£235.00** | £276.12 |
| **17" Iiyama Pro 410** | **£267.00** | £313.73 |
| **19" Iiyama Pro 450** | **£400.00** | £470.00 |
| **21" Iiyama Pro Diamondtron** | **£630.00** | £740.25 |
| AKF53 Multisync 14" 1yrRTB | £149.00 | £175.08 |
| AKF50 Multisync 14" 1yrRTB | £190.00 | £223.25 |
| *AKF12 PAL 14"* refurb 90 days | *£65.00* | £76.37 |
| *AKF52/53* M/sync refurb 90 days | *£99.00* | £116.32 |
| *AKF60 SVGA 14"* refurb 90days | *£65.00* | £76.37 |
| Multisync A300/A3000 cable | £8.50 | £9.99 |

## CD-ROM WRITERS



Prices Start from £149.00 +

| | | |
|---|---|---|
| 4x4x16x | £149.00 | (£175.08) |
| 6x4x16x | £169.00 | (£198.58) |
| 6x4x24x | £199.00 | (£233.82) |
| **CD-BURN** | **£49.00** | **(£57.58)** |
| **CD-SCRIBE 2** | **£49.00** | **(£57.58)** |

## HARD DRIVES AND SUB-SYSTEMS

| | A3020 | | A30X0 & I/F | |
|---|---|---|---|---|
| | Ex VAT | Inc VAT | Ex VAT | Inc VAT |
| 60/80MB | £39.00 | £45.83 | £79.00 | £92.83 |
| 170MB | £49.00 | £57.58 | £89.00 | £104.57 |
| 340MB | £59.00 | £69.33 | £99.00 | £116.32 |
| 500MB | £79.00 | £92.83 | £119.00 | £139.83 |
| 810MB # | £99.00 | £116.32 | £125.00 | £146.87 |
| 1.0Gb # | £109.00 | £128.08 | £134.00 | £157.45 |
| 2.1GB # | £123.00 | £144.53 | £149.00 | £175.08 |
| 3.2GB # | £129.00 | £151.58 | £155.00 | £182.12 |
| 4.3GB # | £149.00 | £175.08 | £175.00 | £205.62 |

A30X0 version includes CD ROM i/f which can be used in A3020 or A4000. For external A3000 i/f add £20.00 +VAT # includes partitioning software

## 3.5" IDE Hard Drives

| | Ex VAT | Inc VAT |
|---|---|---|
| 210Mb # | £25.00 | £29.37 |
| 250MB # | £30.00 | £35.25 |
| 340MB # | £35.00 | £41.12 |
| 420MB # | £40.00 | £47.00 |
| 500MB # | £49.00 | £57.58 |
| 1.2GB | £55.00 | £64.62 |
| 2.1GB | £60.00 | £70.50 |
| 4.3GB | £70.00 | £82.25 |
| 6.4GB | £75.00 | £88.12 |
| 8.4GB | £85.00 | £99.87 |
| 12.9GB * | £95.00 | £111.62 |
| 16.8GB * | £110.00 | £129.25 |
| 20.1GB * | £125.00 | £146.87 |
| 25.0GB * | £160.00 | £188.00 |
| 36.4GB * | £235.00 | £276.12 |

* requires RISCOS 4 or Partitioning s/w for RISCOS 3.5 / 3.6 / 3.7 only £25.00 + vat

## SCSI HARD DRIVES

| | | |
|---|---|---|
| 540Mb # limited supply | £35.00 | (£41.13) |
| 1Gb | £50.00 | (£58.75) |
| 2Gb (5400 rpm) special | £80.00 | (£94.00) |
| 2Gb (7200 rpm) # | £100.00 | (£117.50) |
| 4.3Gb (5400 or 7200rpm) | £140.00 | (£164.50) |
| 9.1Gb (7200rpm) | £195.00 | (£229.13) |
| 18.6Gb (7200 rpm) | £329.00 | (£386.58) |
| 36.4Gb (7200 rpm) | £640.00 | (£752.00) |

For EXT. SCSI 1 case £50.00 + VAT (inc. cable)
For EXT. SCSI II case £55.00 + VAT (inc. cable)

## Removable Drives

**IDE Drives** require drivers or hardware

| | | |
|---|---|---|
| Zip 100 int | £55.00 | (£64.63) |
| Zip 250 int | £119.00 | (£139.83) |
| 2.2 GB Orb | £175.00 | (£205.63) |

**Parallel Drives** including Acorn Software

| | | |
|---|---|---|
| Zip 100 | £99.00 | (£116.33) |
| Zip 250 | £139.00 | (£163.33) |
| Jaz 2G | £299.00 | (£351.33) |

**SCSI Drives**

| | | |
|---|---|---|
| Zip 100M int | £85.00 | (£99.88) |
| Zip 250M ext | £116.00 | (£136.30) |
| PD650/CD | £139.00 | (£163.33) |
| Nomai 750(270&135sq) | £165.00 | (£193.88) |
| Jaz 2G int | £235.00 | (£276.13) |
| Jaz 2G ext | £235.00 | (£276.13) |

## RISC OS 4

£99.00 +vat (£116.33) place your order now

Fitting & data transfer, if required, £25 inc vat (£15 with new HD). Stock Available NOW

## StrongARM Rev "T" with RISC OS 4 only £299 inc VAT

## CD-ROMS



SCSI 8x Autochanger £85.00 + vat (£99.88)

| IDE | | | SCSI | | |
|---|---|---|---|---|---|
| 48x | £39.00 | (£45.83) | 40x | £65.00 | (£76.38) |
| 40x | £35.00 | (£41.13) | 32x | £55.00 | (£64.63) |
| 8x | £30.00 | (£35.25) | 8x | £30.00 | (£35.25) |

IDE driver for Risc OS 3.5 £15 + vat
IDE int. fitting kit £5 inc. Int. SCSI fitting kits from £10 + vat

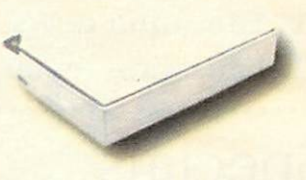
## External CD ROMs

40x CD Tower (6 SCSI drives) space for HD £449 + VAT

| | |
|---|---|
| 40x IDE (with cable) | £85 + VAT |
| 40x SCSI I(with cable) | £115 + VAT |
| 40x SCSI II(with cable) | £120 + VAT |

## COLOUR SCSI SCANNERS

All scanners inc Acorn Software



| | | |
|---|---|---|
| P'llel Mustek 600dpi | £99.00 | (£116.33) |
| Mustek A4 600dpi | £119.00 | (£139.83) |
| Mustek A4 1200dpi | £149.00 | (£175.08) |
| Epson GT7000 | £199.00 | (£233.83) |
| Epson GT7000P | £249.00 | (£292.58) |

Imagemaster & Twain also available separately

## Interface Adapters

| | | |
|---|---|---|
| **EESOX SCSI 32-bit DMA** | **£84.26** | **£99.00** |
| *Storm SCSI 8-bit (A30x9 int)* | £88.00 | £103.40 |
| Storm SCSI 16-bit (podule) | £96.00 | £112.80 |
| Storm SCSI 32-bit DMA (podule) | £128.00 | £150.40 |
| Simtec 8-bit (A3000/A3010) | £55.00 | £64.63 |
| Simtec 16-bit (AX00/A5000/RPC) | £45.00 | £52.88 |
| APDL 16-bit DMA | £45.00 | £52.88 |
| APDL BlitZ 32-bit DMA | £99.00 | £116.33 |
| Removable IDE or SCSI housing | £20.00 | £23.50 |
| High speed serial cards single | £67.23 | £79.00 |
| High speed serial cards dual | £75.75 | £89.00 |
| High speed serial cards triple | £84.26 | £99.00 |

## CD Media

| | ex VAT | inc VAT |
|---|---|---|
| CDR CD-ROM | £1.28 | £1.50 |
| CDR 10 pack | £10.00 | £11.75 |
| CDR 25 pack | £21.28 | £25.00 |
| CDR 80min 10 pck | £12.00 | £14.10 |
| CDR 80min 25 pck | £25.53 | £30.00 |
| CDR/W CD-ROM | £4.00 | £4.70 |
| CDR/W 10 pack | £30.00 | £35.25 |

## Removable Drive media

| | ex VAT | inc VAT |
|---|---|---|
| 100Mb Zip | £8.00 | £9.40 |
| Zip 5 pack | £35.00 | £41.13 |
| 250Mb Zip | £12.76 | £14.99 |
| 120M LS 120 | £7.00 | £8.23 |
| 650Mb PD | £19.00 | £22.33 |
| 750Mb Nomai | £38.00 | £44.65 |
| 1Gb Jazz | £58.00 | £68.15 |
| 1.5Gb Syquest | £58.00 | £68.15 |
| 2.0GB Jazz | £69.00 | £81.08 |
| 2.2GB ORB | £33.00 | £38.78 |
| 5.2Gb DVD RAM | £25.00 | £29.38 |

## 3 yr Warranty on ALL Acorn MEMORY why Pay More??

### NEW LOWER PRICES
*only whilst current stocks last*

| | Ex VAT | Inc VAT |
|---|---|---|
| A310 4Mb Upgrade | *£35 | £41.13 |
| A310 RISC OS carrier board | *£19 | £22.33 |
| A310 MEMC1a upgrade kit | £20 | £23.50 |
| A400/1 1Mb Upgrade (per Mb) | £25 | £29.38 |
| A3000 1-2Mb Non-Upgradeable | £15 | £17.63 |
| A3000 1-4Mb Upgrade | £35 | £41.13 |
| A3000 Serial Port Upgrade | £19 | £22.33 |
| 4-8Mb Up. (A310, 440, 3000*) | £55 | £64.63 |
| A3010 1-2Mb Upgrade | £20 | £23.50 |
| A3010 1-4Mb Upgrade | £45 | £52.88 |
| A3020/4000 2-4Mb Upgrade | £40 | £47.00 |
| A5000 2-4Mb Upgrade | £45 | £52.88 |
| A5000 4-8Mb 25Mz* & 33Mhz | £55 | £64.63 |
| NEW A540 4Mb | £45 | £52.88 |
| FPA10 for A5000 or Arm 3 Card | £45 | £52.88 |
| Replacement VIDC or IOC chips | £20 | £23.50 |
| * rework if required | £25 | £29.38 |

**Risc OS 3.11 Rom upgrades**
£25.00 exc Vat (£29.38)

### *RISC PC MEMORY check latest prices*

| | | |
|---|---|---|
| 8Mb SIMM | £10.00 | £11.75 |
| 16Mb SIMM | £20.00 | £23.50 |
| 32Mb SIMM EDO | £42.00 | £49.35 |
| 32Mb SIMM FPM | £49.00 | £57.58 |
| 32Mb high clearance | £59.00 | £69.33 |
| 64Mb SIMM | £75.00 | £88.12 |
| 128Mb SIMM from | £130.00 | £152.75 |
| 1Mb VRAM | £35.00 | £41.12 |
| 2Mb VRAM | £75.00 | £88.12 |
| 1-2Mb (exchange) | £65.00 | £76.37 |

**33 Mhz Arm 3 upgrade SPECIAL**

| | | |
|---|---|---|
| with FPA socket | £45.00 | £55.88 inc. |
| FPA 10 (25Mhz) | £84.26 | £99.00 inc. |

**RPC 16 bit audio & mixer £59 inc**

## NETWORKING

### ETHERNET INTERFACES

| | Ex. VAT | Inc VAT |
|---|---|---|
| A3000 int. 10base2 or T, Access+ | £89.00 | £104.58 |
| A400/A5000 10base2 or T Access+ | £89.00 | £104.58 |
| A400/A5000 10base2 & T Access+ | £99.00 | £116.33 |
| A3020 10base2 Access+/ext. MAU | £94.00 | £110.45 |
| A3020 10baseT Access+/etx. MAU | £94.00 | £110.45 |
| Risc PC/A7000 10base2 & T Acc+ | £99.00 | £116.33 |
| Risc PC/A7000 10base2 Access+ | £79.00 | £92.83 |
| Ant Access + ROM upgrade | £10.00 | £11.75 |

### Cables

| | | |
|---|---|---|
| 2M | £3.00 | £3.53 |
| 3M | £5.00 | £5.88 |
| 5M | £6.00 | £7.05 |
| 10M | £10.00 | £11.75 |
| 20M. | £15.00 | £17.63 |

State 10base2 or 10baseT
any size made to order

**We supply and / or install all network components please ring for your requirements**

### Network Hubs *(more available)*

| | Ex VAT | Inc VAT |
|---|---|---|
| 8 Port 10 base | £39.00 | £45.83 |
| 8 Port 100 "special" | £125.00 | £146.88 |
| 8 Port 100/10 Auto | £149.00 | £175.08 |
| 18 Port 10 16T+ 2BNC | £75.00 | £88.13 |
| 16 Port 100/10 Auto | £249.00 | £292.58 |
| 16 Port 100/10 Auto (inc 3 port switch) | £299.00 | £351.33 |
| 24 Port 100/10 Auto | £389.00 | £457.08 |
| 24 Port 100 "special" | £349.00 | £410.08 |

### NETWORKING SOFTWARE

| | | |
|---|---|---|
| Topcat site licence | £489.00 | (£587.50) |
| NTfiler site licence | £97.00 | (£113.98) |
| Omniclient site licence | £489.00 | (£587.50) |
| Lanman98 single user | £35.00 | (£41.13) |
| Win95FS single user | £35.00 | (£41.13) |
| Lanman or Win95FS 10 user site licence | £110.00 | £129.25 |
| Lanman or Win95FS 20 user site licence | £156.00 | £183.30 |

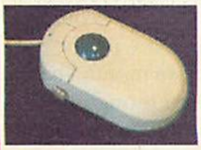
## MICE & KEYBOARDS



High Quality Acorn ERGO Mouse £12.00 (£14.10)

| | Ex. VAT | Inc. VAT |
|---|---|---|
| Acorn Trackerball/Mouse NEW | £29.79 | £35.00 |
| Acorn Original Mouse | £25.00 | £29.38 |
| Acorn ERGO Mouse NEW | £12.00 | £14.10 |
| A7000 replacement Mouse NEW | £12.00 | £14.10 |
| Ergo (std) Risc PC Keyboard | £21.28 | £25.00 |
| Ergo curved Risc PC Keyboard | £29.78 | £35.00 |
| A400/A5000 replacement K/brd | £59.00 | £69.33 |
| A400/A5000 Ergo Keyboard | £69.00 | £81.08 |

### ACORN MKII TRACKBALL & MOUSE



**£29.79 + (£35.00)**

We have a large collection of Budget PC software suitable for RPC Pc Emulators and PC clones inc, Education, Home, games an utilities please ring for list

### RiscPC PC Cards

| | |
|---|---|
| DX2-66 | £135.00 inc VAT |
| 586-100 (Aleph) | £225.00 inc VAT |
| 586-133 (CJE 512) | £225.00 inc VAT |

### Replacement Floppy Drives

A3000/400/500 £29.00+vat (£34.08)
A30X0/4000/5000 floppy allows cross - formatting of HD and DD discs £29.00+vat (£34.08)

### POWERED SPEAKERS

| | Ex. VAT | Inc. VAT |
|---|---|---|
| 60 watts with PSU | £13.50 | £15.86 |
| 240 watts with PSU | £21.00 | £24.68 |
| Subwoofer system | £42.00 | £49.35 |

### Character Mouse Mats

| | |
|---|---|
| Southpark Kenny | £4.99 |
| Southpark Cartman | £4.99 |
| Disney Mickey, Pooh, Donald, etc | £4.99 |
| X-Files (four types) | £4.99 |
| Garfield or novelty | £4.99 |
| Standard mat £1.00 / Econ. £0.65 | |

### Switch Boxes

| | | |
|---|---|---|
| 2-1 with cable | £15.00 | £17.63 |
| 2-1 Auto with cable | £15.00 | £17.63 |
| 4-1 with cable | £19.00 | £22.33 |
| 2-1 Monitor/K'board | £29.79 | £35.00 |

We stock Printer Ribbons, Inkjet Cartridges
New/Recycled Laser Toner Carts
Prices available on request

## Consumables

*Premier Quality Ink Refills*

| | | |
|---|---|---|
| Single refills | (1x22ml) | £6.00 inc |
| Twin refills | (2x22ml) | £10.00 inc |
| Triple refills | (3x22ml) | £14.00 inc |
| Tri- Colour | (C.M.Y) | £15.00 inc |
| Quad-Colour | (C.M.Y.K) | £20.00 inc |
| 125 ml | | £21.00 inc |
| 250ml | | £38.00 inc |
| 500ml | | £50.00 inc |
| 1 litre | | £70.00 inc |

*All sizes available in C.M.Y.K*

### *FLOPPY DISKS @ 20p!!*

| | Ex VAT | Inc VAT |
|---|---|---|
| DD Re-label Acorn fmt 10 | £2.00 | £2.35 |
| DD Re-label Acorn fmt 100 | £17.02 | £20.00 |
| HD bulk Acorn or PC 10 | £2.00 | £2.35 |
| HD bulk Acorn or PC 100 | £17.02 | £20.00 |
| HD Branded 10 pack | £3.00 | £3.53 |
| 20 cap Disk Box | £1.69 | £2.00 |
| 40 cap Disk Box | £2.54 | £2.98 |
| 100 cap Disk Box | £2.98 | £3.50 |
| Mouse cleaner | £4.99 | £5.86 |
| 3.5" Floppy head cleaners | £2.50 | £2.94 |
| CD-ROM cleaner | £4.25 | £4.99 |

**We can repair/upgrade your machine(s) and monitors at competitive prices please ask**
All Acorn's, BBCs & PCs

## ARCSHARE

Acorn networking for PCs
**£29.95 exc Vat £35.19 inc Vat**
see network section for Cards etc

## NETWORK Special

RPC network podule
10base2
only £79.00 + VAT
**(Offer available while special stocks last)**

## Hard Drive Specials

**A3000/A3010 170mb**
**HD & I/F £69 + Vat (£81.08)**

**A300/A400 200mb HD & I/F**
**£59 + Vat (£69.33)**
**(hard drive mounts extra)**

**(Offers available while special stocks last)**

## Digital Camera Specials

| | | |
|---|---|---|
| Olympus C-830L | £297.86 | £349.99 |
| Olympus C-920L | £382.97 | £449.99 |
| Olympus C-21 | £510.63 | £599.99 |
| Olympus C-2000 | £595.74 | £699.99 |
| Olympus C-2500 | £1021.27 | £1199.99 |

*prices include Photolink software*

(All Prices below include VAT) **THE BARGAIN BASEMENT** ***Check the Software Network***

## Acorn Software Bin

| | |
|---|---|
| 10 out of 10 all titles (each) | £9.00 |
| 10 out of 10 all 18 titles | £69.00 |
| A3010 Joystick Controller Software | £15.00 |
| Joystick Controller & Software | £25.00 |
| Ancient Lands (M'soft) CD Acorn reader | £45.00 |
| Ankh (HD) | £20.00 |
| Arm Tech Labeller | £9.00 |
| Arm Tech ClipArt (various per pack) | £8.00 |
| Birds of War | £20.00 |
| Boxing Manager | £5.00 |
| ChildPlay (desktop frontend) | £14.95 |
| Clares Cardshop | £20.00 |
| ColourSep (Colour Separation Software) | £5.00 |
| Creator 2 | £25.00 |
| D'File Font Pack (Academy) | £5.00 |
| D'File Font Pack (Balmoral) | £5.00 |
| D'File Font Pack (FreeStyle Script) | £5.00 |
| D'File Font Pack (Manhattan) | £5.00 |
| D'File Font Pack (Mastercard) | £5.00 |
| D'File Font Pack (Old Towne 536) | £5.00 |
| Diary + | £8.00 |
| Drifter | £30.00 |
| FIRE and ICE | £10.00 |
| Galactic Dan | £10.00 |
| Game ON (for RPC/ A7000) | £15.00 |
| Global Effect | £20.00 |
| Guile | £10.00 |
| HERO QUEST | £10.00 |
| Imagery Art Package | £20.00 |
| James Pond (Underwater Agent) | £23.00 |
| Jahangir Khan Squash | £5.00 |
| My World Support Disc Ancient Egypt | £10.00 |
| My World Support Disc Ancient Greece | £10.00 |
| Nuclides II and Elements II (save £5.00) | £25.00 |
| Outline font (BookM) | £5.00 |
| Quest for GOLD | £5.00 |
| RAMplify | £17.95 |
| Revelation 2 | £25.00 |
| Rosie & Jim Talking Activities | £16.00 |
| Sellardore Tales | £20.00 |
| SilverBall | £9.99 |
| Sim City (A5000) | £30.00 |
| Small (RPC) | £17.00 |
| Smudge the Spaniel | £25.00 |
| Spelling Book (Creative Curriculum) | £30.00 |
| StrongGuard | £25.00 |
| TURBO DRIVER - HP | £45.00 |
| VidC enahncer (HW/SW) | £20.00 |
| Wavelength | £10.00 |
| World Class Leaderboard (GOLF) | £10.00 |
| Zool (HD) | £10.00 |

### 1/2 price (or less) Book

| | |
|---|---|
| Dabhand Guide "Budget DTP" | £2.50 |
| Dabhand Guide "C" ver 3 | £5.00 |
| Dabhand Guide "C" ver 2 | £2.50 |
| Dabhand "Graphics on the ARM | £5.00 |
| Dabhand Guide "Impression" | £5.00 |
| Internet info server | £20.00 |
| SQL | £17.50 |

## Acorn CD-ROM Software

| | |
|---|---|
| Abuse | £22.00 |
| Crystal Maze | £15.00 |
| Descent | £27.00 |
| Doom + Trilogy | £30.00 |
| Doom + Trilogy with book | £32.50 |
| Doom Secrets book | £10.00 |
| Final Doom (req's Doom) | £15.00 |
| Heroes of Might and Magic 2 | £32.00 |
| HoMM Price of Loyalty exp | £22.00 |
| Heretic & Hexen Triple pack | £30.00 |
| Hutchinson Encyclopedia | £39.00 |
| Quake Pack (AVAILABLE NOW) | £23.00 |
| Robert Duncan Cartoon KIT | £39.00 |
| Syndicate | £25.00 |
| Tots TV ABC | £15.00 |
| YITM Electricity and magnetism | £15.00 |
| YITM Elements | £15.00 |
| YITM Materials | £15.00 |
| YITM (all three titles) | £35.00 |

### CD General Resource Titles

| | |
|---|---|
| 10000 Clip Art (Draw Format) | £5.00 |
| 550 fonts | £5.00 |
| D'File PDCD 5 | £10.00 |
| Symphony Music collection | £5.00 |
| TopicArt CD | £5.00 |

## Various Hardware Bargains

| | | | |
|---|---|---|---|
| A3000 2Mb bases from | # | £55.00 | £64.62 |
| A3010 2Mb bases from | # | £85.00 | £99.88 |
| A3020 2Mb bases from | # | £115.00 | £135.12 |
| A4000 2Mb bases from | # | £150.00 | £176.25 |
| A5000 4Mb bases from | # | £210.00 | £246.75 |
| A7000 4Mb bases from | # | £275.00 | £323.13 |
| **A4 Portables (6 months wty)** | **#** | **£500.00** | **£587.50** |
| RPC 700 bases from | # | £435.00 | £511.13 |
| SVGA Monitors Various from | # | £45.00 | £52.88 |
| SCSI 8x 4 way autostacker | | £85.00 | £99.88 |

# all 2nd user items 90 days Wty

### Alternative PC Bases

i.e. Siemans P200 MMX from ONLY £249.00 + VAT ring for latest prices.

### HOW TO ORDER

BY MAIL or PHONE: Cheques or P.O.s should be made payable to 'CTA DIRECT'.
CREDIT CARD / SWITCH please give name, address, tel. no, card no, expiry date, issue no.
BY EMAIL: sales@cta.u-net.com
**OFFICIAL ORDERS by MAIL or FAX please**
Carriage charges inc. ins. & packaging charged at cost
Small items (under 2Kg).....no more than £6 + vat
One box of items totalling upto 25kg...£6.50 + vat
Computer systems.................................£13 + vat
All prices are correct going to press. E&OE
All goods are fully guaranteed but not supplied on approval

# RISC OS '99 success: the official version

In our previous issue, as deadline time was tight we were forced to bring you a slightly rushed report of the first RISC OS'99 show which was held at Epsom Downs race course. We've now received official word from the organisers of the event, the ARM Club. "It quickly became clear on Saturday morning that the show was going to surpass all expectations with a long queue at the door waiting to get in.

"All through the Saturday, the show theatre was full to bursting and an atmosphere existed within the venue that was described by at least one exhibitor as "buzzing". Many exhibitors indicated that it was their best show for several years; for some it turned out to be their best show ever with quite a few being forced to return to base on the Saturday night to replenish exhausted stocks."

Here are comments from just a few of the exhibitors and visitors to the show: Icon Technology's Mike Glover: "It was our most successful show ever with sales 40% up on our previous best. Proof indeed that the RISC OS market is alive and well." Jack Lillingston of Castle Technology Ltd: "Saturday gave us the highest turnover of any show since the last Acorn World. We sold many computers, and our customers were glad to see the Risc PCs back in production."

Aaron Timbrell of iSV Products: "The RISC OS '99 Show was truly excellent and demonstrates that faith in the marketplace has been restored amongst both developers, dealers and customers." Aleph One's Laurie van Someren: "I got the definite sense that there is a lively market coming back... 'You can't keep a good computer down' is the feeling I get from this Show."

Richard Jozefowski from Millipede Electronic Graphics: "It turned out to be one of the most successful events in a long time, with a sense of optimism returning at last." R-Comp Interactive's Diana Rawnsley reported: "We sold out of all our Internet products – one of them by 2pm on Saturday!"

Roy Heslop, the boss at CTA and the new RiscStation manufacturer explained: "Had a very successful show, and had dealers/prospective dealers from New Zealand, Italy, Holland, Belgium and of course, the UK come to see us. Indications are very good with lots of orders taken. We're very happy, but very, very tired."

APDL's Dave Holden was yet another ecstatic exhibitor: "I couldn't have been more pleased with the show. APDL took more money than at Acorn World '97, even though many of the products have fallen in price. More important than money was the atmosphere of renewed confidence in the market with people willing to spend money on bits for their Acorn."

John Stonier, who organises his own shows in the South East and South West, commented: "It certainly reminded me of past Acorn World shows and the atmosphere was very similar." Meanwhile, Michael Fancourt summed things up eloquently: "Many others contributed to the impression I went away with, that it is a real tonic to talk with people willing to give their time to listen and to help ... in these days when so much seems to be negative or fault-finding I found the day one to treasure."

The RISC OS '99 Show was largely due to the extremely hard work of Mark Smith, Rob Brown, Dave Ruck, Ralph Sillett, Tom Hughes, Toby Smith, Simon Burrows and Chris Price. *Acorn User* thanks them and everyone else whose contributions made the event the success it proved to be. If that wasn't enough, the ARM Club's next event in the form of the Midlands show at the Birmingham National Motorcycle Museum was also very successful, despite being just three weeks after the Epsom extravaganza. The ARM Club's Web site is at http://www.armclub.org.uk/

## Strong support moves

Guttorm Vik, author of many well-known freeware and shareware titles, such as *StrongED* and *StrongHelp*, has had to give up developing RISC OS software. Software updates and the maintenance of his Web site has been transferred to Jérôme Mathevet.

The new official Strong home page is at http://freenet.barnet.ac.uk/manuals/g.vik/strong.html. The former page, at http://home.eunet.no/~guttorvi/strong.html could remain indefinitely, but is unlikely to be updated any further.

Jérôme's new site will offer advice and other resources, but he won't be developing the applications or issuing any updates himself. He will, however, be introducing support for French-speaking users.

# New Millennium drawing

iSV Products previewed a new 'Millennium' edition of their *DrawWorks* package at the recent Midlands show. *DrawWorks* is a new front-end to *Draw* that makes it easier to access many of *Draw*'s features and extends its capabilities enormously, the Millennium edition was reviewed in the November issue of *Acorn User*.

Latest improvements include: on-screen anti-aliasing; soft-edged shadows; use of both PureTint and named colours for shadows; the ability to automatically mix named colours with black; autoscrolling toolbars; control over the grey component when producing CMYK separations; export of 24-bit TIFF images; export of JPEG, Sprite, GIF and TIFF with anti-aliasing at up to 1200dpi; improved EPS export including preview images; OLE editing of JPEG images and text areas; a new 'metaliser' tool to add metallic shading to objects, tracing of bitmap images to convert them to draw files; plus there's the addition of the *FontFiend* font editor and the ability to export of PostScript Type1 fonts with hinting.

More, as-yet unnamed improvements, are in the pipeline. The target date for shipping *DrawWorks New Millennium* is at the Wakefield show in May. Beta-testing is expected commence around the end of February. Progress will be highlighted on the iSV Web site at www. isvproducts.co.uk

# Cerilica *Vantage* news

While iSV's *DrawWorks New Millennium* package may not be quite as ambitious as Cerilica *Vantage*, we should hope its development doesn't repeat the *Vantage* experience. Cerilica are acutely aware that *Vantage* has taken considerably longer to develop than expected – in his own words, Cerilica's marketing director, Nicholas van der Walle admitted: "Over the past few months we have been keeping our heads low in an attempt to get on with the task at hand especially as Cerilica *Vantage* is almost one year late."

Cerilica stayed away from the RISC OS '99 at Epsom last October, but proved to be a hit with its reappearance at the recent Midlands show, largely because of its neat new MMK multimedia keyboard (see separate story). Nicholas van der Walle added: "Now that Cerilica *Vantage* is nearing completion, we shall be keeping everybody well informed via both the Cerilica Web site and the Cerilica mailing list (which you may join by visiting the Web site).

Our priority is to ensure that our existing customers are served first and we thank them for their continued patience in awaiting the final release of Vantage which is now set to be shipped in January 2000." The Cerilica Web site is worth a visit if you haven't seen it recently. It now exhibits more recent screen grabs showing the packages capabilities from effects such as dynamic vector transparencies to real time RGB to arbitrary ink simulation, which is probably unique to *Vantage* on any platform. Regular updates are promised leading up to the final release of the pukka 'finished' version of *Vantage*.

Cerilica has other news waiting in the wings. Indeed, we're expecting the company to announce an exclusive deal with RISCOS Ltd concerning the marketing of their *Taborca* PDF (portable document format) generator.

We hope to have more news on that next month. Cerilica Ltd, tel: 01989 567350, e-mail: cerilica@cerilica.com, Web: http://www.cerilica.com/

## Millipede has legs

At the Epsom RISC OS '99 show at the end of October, Millipede publicly showed its exciting new Imago Concept Risc PC board working for the very first time. It was only capable of performing some extremely basic operations, but it was definitely up and running. A month on, we have heard encouraging news from Millipede, who have enabled more complex operational modes and they report that the graphics performance of the board exceeds that published in their original specifications. Midlands Show visitors were treated to the sight of an Imago Risc PC displaying a RISC OS desktop at 2048x1536 resolution in full colour.

Most Risc PCs are limited to 2Mb of video memory, meaning that the most common maximum resolution screen mode in use is 1600x1200 and even then, only in monochrome mode. That full colour Imago hi-res mode uses 9Mb of memory and a very big monitor.

A year ago, frantic meetings around the country were being held to secure the future of RISC OS and projects like Millipede's Imago board and now we're seeing the fruits of that labour. The Year 2000 is going to be a very exciting year. Millipede Electronic Graphics can be found at e-mail: info@millipede.co.uk, Web: http://www.millipede.co.uk

# Taxan announces Valuevision

Once the lucky few get their Millipede Imago Risc PCs they are going to need a stonking big monitor in order to display this huge screen modes available to them for the first time. It so happens that Taxan, an established player in the monitor market, is launching its new Valuevision monitor brand with an attractive looking 21 inch monitor which won't necessarily break the bank.

The £469+VAT monitor features 0.26mm dot pitch FST tube, the latest radiation emissions standards compliance and digital picture adjustment controls. What it does lack and is reflected in the "value" part of the branding is luxury extras like a built-in USB hub. For the time being, at least, USB is not necessarily a very high priority in the RISC OS market.

However, the Valuevision 2175 TCO 99 can display a 1600 x 1200 screen mode at an acceptable refresh rate of 75Hz. Taxan is expected to add further models to its new Valuevision range during 2000. Taxan UK, tel: 01344 484646, Web: http://www.taxan.co.uk



# CD/RW gets DVD read

It had to happen sooner or later – somebody was always going to incorporate a DVD ROM drive into a CD/RW drive. That somebody is Memorex with its TriMaxx200 product. It looks like any old CD-ROM drive, but inside you'll find a 24X CD-ROM, 6X CDR writer, 4X CD/RW re-writer and a 4X DVD-ROM. the only catch it seems to be that none of these speed ratings is cutting-edge. However, for most the drive will be fast enough and considering the functionality it offers the asking price of £279 is quite reasonable. At the time of writing, at the very end of November 1999, the TriMaxx200 was not yet shipping but scheduled to hit the store shelves in time for Christmas. The drive uses a conventional IDE interface and let's hope there are no configuration issues which would prevent RISC OS users from enjoying this product. Memtek Products Europe Ltd, tel: 0181 990 6600, e-mail sales@memtek.co.uk

# RISCOS Ltd moves on from paper

RISCOS Ltd has, until now, been distributing a paper-based newsletter concerning its activities. Those who have signed up to receive the newsletter will now, instead, receive a quarterly CD ROM-based magazine instead. For more information, check out http://www.riscos.com

# RISC OS 4 compatibility

It would have been a miracle if the much-welcomed release of RISC OS 4 had escaped any software compatibility problems with applications developed for earlier versions of RISC OS. Now that RISC OS 4 has been more widely distributed, there is more feedback concerning compatibility issues. It looks like most of the problems are fixable through upgrading to the latest versions of applications or through patches. Here is some of the advice we have received to date:

Spacetech says users of its *Orrery* program can obtain a patch from them to enable it to run properly on RISC OS 4. *Photodesk Light* users should ensure they are running the latest version 3 of this application. The full version of *Photodesk 2* is not RISC OS 4 compliant – the only solution is to upgrade to *Photodesk 3*. Spacetech's Web site is at http://www.spacetech.co.uk, or you can contact them at e-mail chris@spacetech.co.uk or tel: 01305 822753.

Clares have warned users of *NightSky* versions 1.01 and 1.02, who will have to upgrade to version 1.03 if they wish to use the program under RISC OS 4. The upgrade can be downloaded from http://www.claresmicro.com/support/nightsky.html. Clares can be contacted at tel: 01606 833999.

We'll be happy to include news of RISC OS applications advice in future editions of *Acorn User* news just e-mail details to news@acornuser.com

# Going multimedia with keyboards

Cerilica Limited, the company which is developing the powerful new *Vantage* graphics suite, has launched a customised RISC OS keyboard which has numerous additional programmable keys and a detachable palm rest.

The Cerilica MultiMedia Keyboard (MMK) was first seen at the recent Midlands show, where Cerilica completely sold out. Cerilica's next batch of MMKs will be tested for compatibility with the forthcoming RiscStation range of RISC OS computers. *Vantage* itself takes advantage of the keyboard's new features.

For example, it is possible to rotate and scale objects by rotating a control on the keyboard which also doubles as a volume control. Cerilica is looking to exploit further features of their new keyboard and have indicated that they will work with third party RISC OS application developers to help their applications make the best use of the MMK. The Cerilica MMK is available for £39.50, inc. VAT and p&p. For more information, see the Cerilica Web site at http://www. cerilica.com/ or phone 01989 567350.



# PC Beebs get better

In this first new millennium edition of *Acorn User* it's fascinating to reflect that even a fairly basic PC-compatible today can emulate, in software, the original BBC Micro and requires the host machine to be slowed down in order for Beeb programs to run optimally!

There are several Beeb emulators designed for RISC OS and one is the freeware *BeebIt* program from New Zealand-based Michael Foot. A new release, version 0.10 of *BeebIt*, has bug-fixed video interrupt emulation which enables Geoff Crammond's incredible *Revs* Formula 3 racing simulator to run correctly.

The System VIA emulation has been updated and now runs the popular *Psycastria* game properly. The 6502 status register has been changed to set B and unused flags correctly. Numerous other tweaks have been made to improve the emulator and there is now full emulation of the Beeb's sound system.

This latest version of *BeebIt* can be downloaded from http://www. voyager.co.nz /~mikef/

## Contacting me

Ian Burley:
news@acornuser.com

## Have an adventure

Whatever happened to text adventures? Being a veteran of classic examples of such adventures running on university mainframes when I was in tertiary education, news that Andrea Gallo was updating his GTAC (Graphic Text Adventure Creator) for RISC OS 4 struck me because text adventures are completely out of fashion. But why should they be?

Keyboard skills have largely replaced the venerable pen or pencil in day-to-day use and e-mail is supposed to be rejuvenating the art of writing. Surely it's an ideal time for text adventures to make a come back? Andrea's GTAC 1.09 can be downloaded from http://web.tiscalinet.it/agallo.

We are also reminded that many demos written with GTAC, including the demo PD version of adventure *Hermes the Gods' Messenger*, originally published by Arch Angel Software, are now available from APDL. Some of Andrea's own creations can also be found on his Web site. Andrea can be contacted at e-mail: andrea.gallo@tiscalinet.it

# Luxury flat bed

While we sit and dream of the day Millipede ships the amazing Imago Concept Risc PC motherboard, we can actually do something practical and invest in a superb quality 1200dpi flat-bed scanner, like Canon's latest FB1200S. It's a SCSI device, with a true 1200x1200dpi optical resolution and scans at a maximum of 36-bits worth of colour depth. It has a fashionable one-touch scan button and options including a film adapter unit and bulk document feeder.

At an RRP of £399, it's not cheap, but with Canon's reputation it's probably worth every penny. Canon UK, Ltd, tel: 01737 220 000, Web: http://www.canon.co.uk

# Better connections

A new version of *smbserver*, a port of a utility called *Samba*, which allows Windows and Unix machines to share RISC OS discs using the Microsoft File Sharing Protocol (also known as CIFS), is now available.

Version 0.05 has been tested running on RISC OS 4.02, RISC OS 3.70 and RISC OS 3.10 with the following clients: Windows 98, Linux (using *smbclient*, *smbmount* and *smbumount*), *Omniclient* and *LanMan98* (see Special Offer on page 48) and is now available for download from http://www.merddin.demon.co.uk/

This latest version adds support for long file names, as well as spaces and mapping of awkward characters in filenames. It also supports the protocols CORE, LANMAN1, LANMAN2 and NT1. Another new option is not to treat archives as directories if you are running *SparkFS* or *ArcFS* plus .exe files should run properly from RISC OS shares.

# DigitalCD gets upgraded

André Timmermans' *DigitalCD*, the public domain RISC OS desktop music player, has been improved. In the latest version, *TimPlayer* incorporates various corrections and a new loader for PTM files. There are new choice settings for *TimPlayer* and *PlayIt* modules. *DigitalCD* now works with Cerilica's MMK keyboard (see other story) and, indeed, is bundled with the keyboard – though certain copyright parts are omitted.

Also new on the *DigitalCD* Web site is the FireComet plug-in from Michael Kuebel. The Web site is at: http://www.geocities.com/SiliconValley/Horizon/4471/

## In brief

### Castle gets RISC OS 4

Castle Technology have confirmed that they have licensed RISC OS 4 from RISCOS Ltd for their Acorn-badged range of computers. From now on buyers of the A7000+ Odyssey and RiscPC233T WebWizard machines will have the RISC OS 4 option.

### Misunderstandings

It has been suggested that the article dealing with the RiscStation R7500 Lite and NetWORX motherboards in the Christmas issue may have been misleading as to the speed of these new machines. The speed comparisons were done against a Risc PC 700, not against a StrongARM machine, which will be much faster overall, of course. Running the Tumble demo a Risc PC SA takes only about 100 seconds.

### Calling the Vice squad

If you didn't know, Vice (Versatile Commodore Emulator) is a software emulation suite which covers the five 8-bit Commodore personal computers: the C64, C128, VIC20, Pet and CBM2.

The emulation is available on several platforms, including RISC OS and the author, Andreas Dehmel (dehmel@informatik.tu-muenchen.de) is keen to hear feedback on the latest version (1.1.28) in order to prepare a new release. You can download Vice from http://www.forwiss.tu-muenchen.de/~dehmel/Software.html

### Bash-a-Mole winner

Congratulations go to Mrs A Bonninga from East Sussex, who was the winner of our subscription competition at the RISC OS '99 show. Mrs Bonninga will now be able to work off her stresses and frustrations at the end of the day by bashing Mike Cook's creation.

## What no coverdisc?

You might have been expecting a cover CD this month, well in order to ensure we have one at Christmas 2000 we are allowing four months between discs this time. So the very next issue, February 2000, will have the first of our regular cover CDs.

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Unit 2A, Heapriding Business Park, Ford Street, Stockport, Cheshire SK3 OBT
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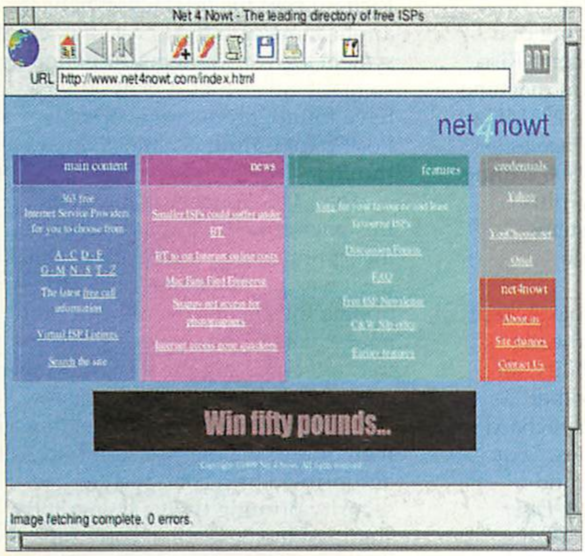
# Owt for Nowt

Like everyone else lured by the promise of free Internet access phone calls, I registered for CallNet0800 using *ANT© Fresco©* with apparent success, but I still haven't heard anything from them yet. The service is advertised as totally free 0800 access and funded by requesting users to make all their other phone calls using a number-prefix offering a rate 30% below standard BT charges. There's no compunction to use the prefix service, but you are required to give credit card details on registration. CallNet0800 started on 1st November and was immediately brought to a standstill, being completely inundated with 'customers'. Forecasters estimate that there will be more than one billion Internet users worldwide by the end of 2000.

The free Internet calls saga continues with the launch of British Telecom's new tariff for service providers. ISPs taking it up will be able to offer unmetered Internet calls for a reasonable monthly fee, according to BT. The Free ISPs and their Internet Services Providers Association (http://www.ispa.org.uk/) say otherwise, even though BT is a member of ISPA.

You can track what's going on at *Net4Nowt*, a web site dedicated to helping users select a free ISP. Net4Nowt lists over 360 free ISPs and their features, with an up-to-date news section and features including a discussion forum and subscription page for their Free ISP newsletter.

*Net4 Nowt*
*http://www.net4nowt.com/latest.htm*



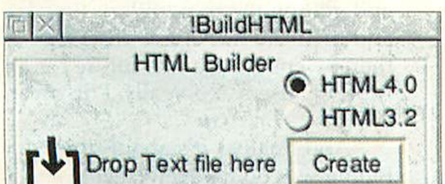

*Nice colours, shame about the text size?*

# Build and Index

Two useful Web utilities by Iain Wilkie Logan can help you with Web site design. *BuildHTML* will intelligently create HTML from a text file dragged to its iconbar icon. The program analyses the text file structure and converts to HTML headings, paragraphs, lists or tables as appropriate.

*BuildHTML* can output in HTML3.2 or HTML4 standards, and you can also add what Iain calls 'primitive' dot+letter markup to the original file to help the formatting routines, but this rather defeats the object of using the program. *BuildHTML* is still in development, occasionally producing unexpected results. *IndexHTML* produces an index in HTML format of all the files in a directory and sub-directories and files within it, and is ideal for creating a Web site map. You might need to edit the HTML page that is output to remove the listings of files and directories you don't want to be seen.

When using *IndexHTML*, the HTML file created should be placed inside the directory just indexed for the displayed links to work correctly. Both programs are freely available from Iain's Enterprise Web site at http://homepages.enterprise.net/iainlogan/miscellany/free2.html




Contacting AU

David Dade:
comms@acornuser.com

## In brief

### Right on the button

Geoff Youngs' *Buttons* is a freeware button bar maker for Web site designers. Geoff's program harnesses RISC OS's powerful in-built handling of *Draw, Sprite* and *Font* objects, and employs other freeware third-party applications *Intergif, Spr2png* and *ChangeFSI* for conversions. *Buttons* places coloured text in your choice of font with optional drop-shadows onto plain or pre-prepared backgrounds, and can create a complete *Javascript* HTML segment button bar with highlighted mouse-roll-over images.

*Buttons by Geoff Youngs*
*http://www.software.solutionsweb.co.uk/buttons/*

### Insert your name here

One of those "How did I do without it?" utilities is *Insert* by Barry Wickett. *Insert* is a simple program that accepts a line of text from a file and inserts it into a RISC OS writable icon belonging to another program. It's indispensable for filling in Web page forms. Just highlight the text you want to transfer, drag the selection icon to *Insert*, click on the target icon, and click on *Insert*. By dragging with Shift held down, a file's pathname can be transferred instead to Web page forms that accept file input.

*Insert by Barry Wickett*
*http://www.chortle.demon.co.uk/software.html*

### Prod that modem

Using a pre-Risc PC computer to access the Internet can be frustrating. Memory shortage is one problem that can be relieved at some expense, but not for the A4 portable user. My A4's greatest problem is an apparent freeze of the serial port and modem after a only few precious 9600 bps minutes online. Musus Umbra's *ModemProd* is a module that monitors the serial port transmit buffer, and if the modem appears to have 'gone to sleep' the program sends it a 'break' signal. This unblocks the freeze and data starts flowing again. If the symptoms sound familiar, try downloading *ModemProd* from the Musus Umbra Web site, which also contains other interesting items.

*!ModemProd by Musus Umbra*
*http://www.argonet.co.uk/users/musus/*

# Graphite Design

Continuing our series highlighting the work of professional graphic designers and design agencies working with RISC OS systems, we had a word with Richard Cassidy, who runs Graphite Design from his studio in Bath. Graphite mainly concentrate on corporate marketing and design work. However, more recently, Richard has added Web design and hosting to his portfolio of services, enabling him to continue to provide a comprehensive design service.

Graphite Design came about about three years ago when Richard finally made the break from retail management. "Having studied art at school, I decided I was no fine artist or illustrator, and pursued design work to satiate my artistic yearnings". The path into RISC OS came from owning one of the first BBC Model A computers and thereby developing a strong loyalty to Acorn.

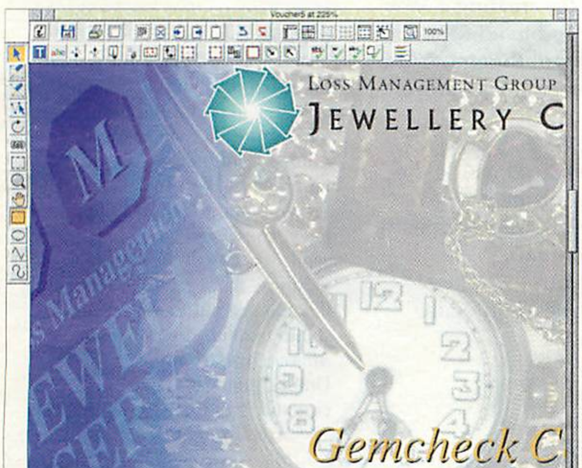
He says: "Computers have always seemed the natural tool to use for design and layout and I feel as if I have been waiting almost since the early BBC days for technology to get where it is now."

Richard's design methods begin traditionally. "As a general rule I start off on paper for rough layout and form and then put ideas straight into *ArtWorks*. Nearly everything goes through *ArtWorks* (as opposed to using bitmap images), as working for regular clients means I have to be able to reuse images easily on various formats and sizes with ease, from stationery to posters to Web sites." For more text-heavy work, Richard uses *Ovation Pro* as a design tool of choice.

Graphite makes use of a "modest" network consisting of a StrongARM Risc PC, a second Risc PC 610, a 450MHz Pentium machine running *Windows98*, and a 233MHz Pentium machine with *Windows95*, along with an Epson GT9500 scanner and Kyocera laser printer, plus miscellaneous storage systems, software and photographic equipment.

Although all design work is kept in house, to keep the overheads down and maintain flexibility, all printing, processing and other output is produced under Richard's supervision by third parties. "For example, for colour work and printing I mainly use *Micro Laser Designs* who have some amazing scanning and digital printing kit, are Acorn friendly and very close at hand, ideal!"

The attraction of RISC OS, and its place in Graphite, is straightforward: it's "fast, stable, intuitive and very lean on hardware requirements". Richard finds the quality and cost of software for RISC OS an added pleasure, although the lack of development in certain areas is a concern.




"The only realistic alternative would be to transfer the whole operation to Macs, but cost in software alone would be astronomical, and with the Imago on the horizon most current drawbacks appear to be covered," he observes.

"It's very easy to be swayed by the 'grass is greener' feeling, especially with the plethora of hardware and speed of development in the 'PC' world, but in the day-to-day running of my business these things make little impact."

A key feature of RISC OS which is used extensively by Graphite is the strong OLE capabilities of many software packages on the platform. Richard sees the interaction between applications and the OS as one of the system's great strengths, although as so many other RISC OS designers have found, producing workable PostScript output is almost always a trauma.

The LMG Voucher featured on this page, a new company logo incorporated into a security voucher design as part of a larger brief to update the client's overall corporate image, was a pleasant exception to this: after creating the design using a mix of *Photodesk*, *ArtWorks* and *Ovation Pro*, "the finished design was then output via the postscript drivers and printed by a specialist in security printing with a holographic stamp of the hexagonal corporate device added to the voucher. The PS output worked first time out of the box and to this day I will never know how!"

Richard sees the eventual release of the *Imago* board as the single most important item on the horizon. In software terms, his 'wish list' would be for software to arrive that addresses some of the problems for further development of the platform: support for reading and writing PostScript and EPS, a fully-fledged browser such as *Internet Explorer 5*, and C++ to remove one of the biggest perceived barriers to future software production. "The quality of some of the available software (especially PD) is astonishing, you just often hardly get to hear about a lot of it. Above all I look forward to the platform regaining its footing and getting the recognition, support and financial backing it deserves thereby ensuring a rich future for all RISC OS users. No, really, I do mean it!

"And finally... it's about time Mr Pilling was on the New Year's honours list," Richard smiles.

## Sugardrum

Together with several of his friends, Nigel Bunner runs an alternative Web magazine entitled *Sugardrum*, at *http://www.argonet.co.uk/sugardrum/* This stylish webzine is produced and maintained entirely on Nigel's StrongARM Risc PC and features a gallery of images created by the site authors, including some created by Nigel himself using a mixture of *Photodesk Lite* and *Photodesk 3*.

Two of the images featured are strongly influenced by Nigel's interest in the *Xena Warrior Princess* cult TV series, and the Sugardrum site includes at its core a cult TV section which invites visitors' contributions. The site also contains an assortment of musings, articles and poems by a variety of authors, and links to a selection of music, literature, Acorn and design sites.








# Pic of the month

The first winner of our re-launched Pic of the Month competition is without doubt very deserving of the prize, and is a spectacular use of complex blending and shading in ArtWorks. Andrew Buckingham's drawing of an Audi TT Coupé was born from a test drive he took, and his resultant desire to adorn his desktop with an image of one.

The image began life as a simple set of outlines created in *Draw*, taken from a picture which had appeared in the car's brochure and the motoring press. Andrew painstakingly made sure that all the panel gaps matched up appropriately, and included a set of shading guidelines for later use in *ArtWorks*.

He estimates that the creation of this original wireframe took at least half the time spent on the whole drawing, and his attention to detail certainly shows.

He had created the Audi rings and the "quattro" logo previously, and included them in the final illustration by use of the perspective tool. In this way, even the rings are carefully shaded, despite occupying such a small area of the overall picture. Andrew observes that in bitmap or painting work "you're meant to start by creating a rough outline of the whole image, and painting over the top of it to put in more detail. I start with the detail and work outwards!" Using a vector-based illustration package allows him to focus on each individual curve, maintaining resolution even at very high magnification, and making sure that he's happy with the result before moving onto the next one.

He admits to fudging the wheels: "Basically, I didn't fancy drawing the proper 6-spoke alloy wheels, so I decided to make them look as if they're motion-blurred.

The shadow underneath the car is supposed to sweep back from the wheels, to emphasise this effect. I'm not entirely sure if it works, but I've lived with it on my backdrop for the past month and it hasn't annoyed me yet."

We're always looking for further entries for the Pic of the Month, so do keep sending your pictures in. Any entry we feature wins a £10 cheque.

### Contacting AU

Andrew Green:
graphics@acornuser.com



# Compare

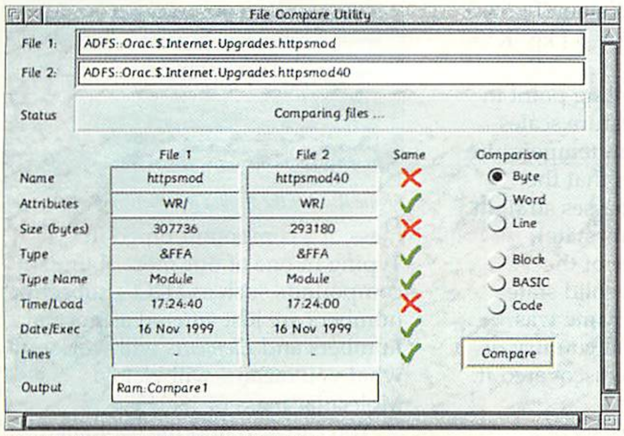



*Figure I: Top-level comparison of two files*

If you are like me and prone to downloading all kinds of things from the Web you will soon encounter that breed of programmer who updates their software more times than you log on to the Net (or eat, depending upon how addicted to the Internet you are).

If you're one of those people who just *has* to have the very latest version of everything, if you're one of those people who's hard disc has more beta software on it than there are bugs in Windows – you may soon get to the point where you can't remember what the latest version of module xyz did, or worse still, find two files with the same name and wonder if they're two copies of the same file or if one differs from the other.

At this point, in comes *Compare*. This simple, yet comprehensive little application from Martin Avison will take any two files and compare them in just about any way you can think of.

In the examples here, I've chosen two files which are obviously different: the 40-bit and 128-bit Fresco SSL module – however, it illustrates the point quite nicely where the differences lie. There are no points for spotting that the filenames are obviously different. The sizes too are different, but the filetypes and date stamps are the same.

Just dragging two files to *Compare* will display a simple chart of the most obvious differences – which in an example such as this is quite easy to spot anyway – but if the filenames had been the same and the sizes matched, things might be a bit more confusing. This is where *Compare*'s second level of comparisons come in. You can select a mode with which to compare the actual contents of the two files.

This can be an exact byte by byte comparison, or you can compare a block, or even lines of BASIC – handy if you've modified a program, only to come back and forgotten what you changed from the previous version. If you compare using this mode you'll get a more comprehensive (and technical looking) display (as in Figure II) as the exact differences between the two files are dumped into your favourite installed text editor. You can then make a detailed comparison. That's basically it. A nice quick and easy way to compare any two files – and enough options to cater for varied situations and criteria. *Compare* is available to download from Martin's web site at http:// www.avisoft.force9.co.uk/ Compare.htm

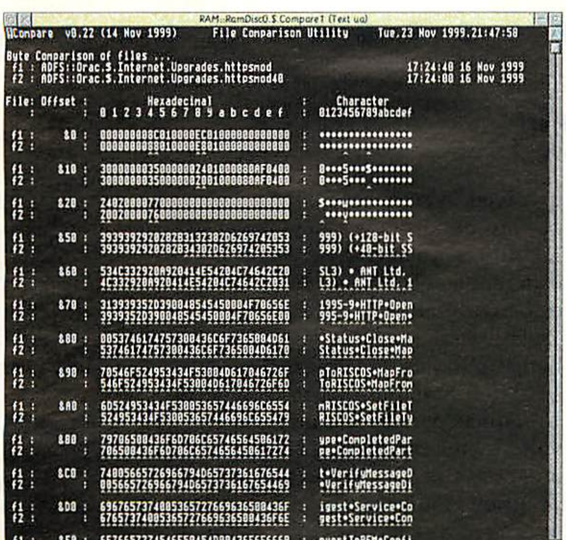
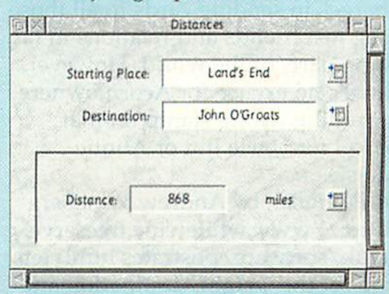



*Figure II: Detailed comparison a utility file*

## Distances

Here is another quick and simple utility which performs a task with the minimum of fuss and glossy extras. *Distance*, by Robert Seago will calculate the distance between two cities in the United Kingdom. The database contains 49 major cities and you can select from any two of them. It works in a similar fashion to those mileage charts you used to get at the back of road atlases where you had to carefully move your finger across a grid to find the intersection of the two places you wanted.

Of course, now you can use your computer to do this for you. Although the range of places is not vast, it's quite likely you'll be able to find one reasonably local to you – and after all, it's a nice simple application which will quickly give you a rough indication of how far apart places are – and you can even toggle the display between miles and kilometers. *Distances* can be found at http://www.users.zetnet. co.uk/rjseago/pdsoft.htm




*The usual test of seeing how far Land's End is from John O'Groats*

# Elements

One area which seems slightly neglected in the RISC OS PD world is that of high quality educational applications – which seems odd, given the pedigree of Acorn machines. *Elements* – by Jonathan Rawle – fills a gap in the chemistry field, and is an information packed database of periodic table information. It's more than just a chemical database though and contains data such as:

- Atomic number, name, symbol, relative atomic mass
- Atomic radius in picometres (pm)
- First ionisation energy (the energy needed to remove the outermost electron from each of 1 mole of atoms is their gaseous state) in kilojoules per mole (kJ $mol^{-1}$)
- Electronegativity (in Pauling's units)
- Principle oxidation numbers, and the corresponding ionic radii in picometres (pm). (Some elements have only 1 oxidation state)

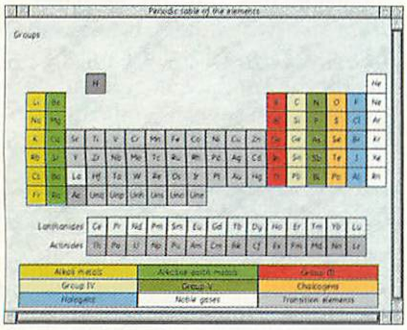


*Figure I: Periodic tables come as standard...*

- Density in kilograms per cubic metre (kg $m^{-3}$) or grams per cubic centimetre (g $cm^{-3}$).
- Specific heat capacity in Joules per kilogram per kelvin (J $kg^{-1}$ $K^{-1}$) or Joules per gram per Kelvin (J $g^{-1}$ $K^{-1}$). It should be noted that 1 J $kg^{-1}$ $K^{-1}$ = 1 J/kg°C
- The melting and boiling point in any of the 5 temperature scales and the state at room temperature (25°C). Subl denotes that the element sublimes (passes straight from solid to gaseous state).
- The crystal structure of the element in its usual solid state
- How the element's name was derived, the date and country of discovery, and who discovered it.

The main window consists of a traditional view showing the complete periodic table in its most basic form. From a menu you can opt to highlight various elements either as Groups, Metals, Radioactivity, Reactivity, State or Year they were discovered (back as far as 1500).

A wealth of additional information can be gleaned simply by clicking on the element which interests you. Figure II shows the infamous element 14. As you can see, the amount of information provided should help answer most frequently asked chemistry homework questions, but there is more to Elements than just a static database:

Additional menu options include the ability to calculate the molecular

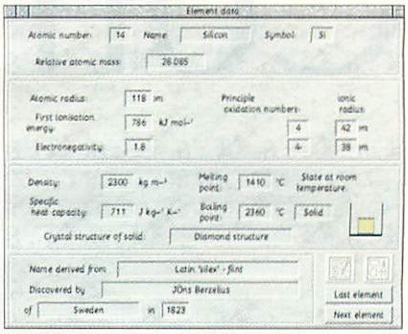


*Figure II: ...but the detailed information is more useful*

mass of a compound typed in. Typing in one of our most abundant compounds such as H2O – subscript numbers are just entered as normal numbers and *Elements* will work out what you mean – will yield a Molecular mass of 18.01528.

You can also find the estimated amount of ionic character of a bond, display information about the various temperature scales and change the units used in the program.

Lastly, Elements can be instructed to give you a simple quiz to test your chemical knowledge, based on asking which elements have a particular atomic number or chemical symbol. A running total of your score is given, so that you know how good (or bad) you are doing. Elements is a worthwhile little application and an ideal assistant for those general chemical questions you may have. It's available to download from http://www.angelfire.com/ak/jrawle

# PostRates

Christmas is a traditional time for spending half your wages on postal charges in sending cards to all those long lost friends and relations in far flung parts of the world. However, there's no excuse for Acorn owners to put the wrong stamp on that parcel for Uncle Jim or Auntie Maisie.

*PostRates*, by Andrew Wineberg (http://www.whitewine.freeserve.co.uk/software/postrates.html) lets you set the weight, destination and service required and will provide an interactive display of the cost involved. A comprehensive set of options are provided so you can see the difference in cost between different levels of recorded delivery or between airmail and surface mail.

The version on Andrew's site is bang up to date, so unless the Royal Mail decide to up the prices over the Christmas period, should still be valid by the time you read this. In any case, the data stored within the program is fully editable so you can alter the rates should they change.

*PostRates* might not be able to guarantee your letter will arrive, but it should help you calculate how much it will cost you to send. Lastly, I would like to wish all readers and very merry Christmas and a prosperous and Happy New Year. At least we can be smug in the knowledge that our computers will still be working next month – unless of course all the electricity goes off.

## Contacting AU

Paul Vigay:
pdpage@acornuser.com

# Bugged the Mil

With the arrival on every doormat in the country of HM Government's booklet on the Millennium Bug snappily entitled *What everyone should know about the Millennium Bug* this article dissects the information relevant to the average Acorn user.

Because we are a group of users of a computer which is pretty much immune from the influence of the Bug it may be that we are more complacent about the systems around us which may be influenced. Perhaps complacent is too strong but we are more likely to underestimate the Bug simply because Acorn machines are not going to fall over at the stroke of midnight. Certainly page 6 of the booklet which deals with Personal Computing would seem to bear this out as RISC OS computers do not merit a mention.

Perhaps it is because with the demise of Acorn, the company, there is no one left to mention. While panic is not advocated a certain circumspect prudence would not go amiss. The first thing to say is that on opening the booklet I was very disappointed that it was not in pop-up form as in the accompanying TV adverts. From then on things only got worse.

While agreeing that much Millennium hysteria is simply that, I found the tone and tenor of the booklet as bland as any other Government publication. There are more interesting VAT bulletins about if you want a riveting read.

While the booklet is subtitled *Facts not Fiction* it would be hard to prove that the facts are not fiction until after the event. That is where the problem lies – the Millennium Bug would not be as much of a problem if it occurred in, let's say, July.

That may seem trite but think about it – the real reason that it may be a problem is because it will occur in the middle of two other very momentous occasions – the Christmas holiday and the actual celebrations of the Millennium itself.

Thus we have three potential areas of difficulty all coinciding: Christmas, the Millennium and the Bug.

Christmas is an annual event and we all know the problems – the holiday is extended this year to cover the New Year Millennium celebrations. This could all add up to about two weeks in total. Expect to see shops, especially those selling food, running low. This is odd because most stores will open between Christmas and the New Year.

They have done for years now but we seem to have developed a racial memory of the days when they did not hence the stocking up that goes on in every ordinary year and this year is no different. Do you know the biggest potential problem with this? Food poisoning from inadequately stored produce. Either the stores will over-stock and standards will slip or we will, when we get the food home.

Even with the long shelf life and long use-by dates on modern food it still needs to be stored in accordance with the labelled instructions. To ignore such things raises the spectre of food poisoning or worse. Be careful – be very careful because the Health services (pages 11 and 13) will be stretched as they always are on a normal holiday – and there's not a word about this in the booklet.

## Getting a rocket

We are all most at risk when we let our normal guard down. Before doing anything different including celebrating the Millennium ask yourself if you would normally do it and if the answer is no, ask yourself why? Let's take an example. Many people will use fireworks to celebrate the Millennium.

Did you know it is illegal to store more than 5kg of fireworks in a normal household? Neither did I but many people have stockpiled them from Bonfire night. That in itself should not be a problem so long as they are safely stored. But the fireworks are just as dangerous on 31st January as they were on the 5th November. Do not do anything with them at the Millennium that you



# by lennium

*Mike Tomkinson isn't bothered much*

would not do on Bonfire Night. The Firework Code applies. Again the last place anyone wants to be at the Millennium is in Casualty. As I have said the tenor of the booklet is very much that everything will be OK, no problems so do not worry. While it would not be right to spoil the whole Millennium celebrations worrying about whether the video recorder will roll over, or fall over, in the Year 2000 you need to bear in mind that the most conservative of industries, the insurance industry, takes a slightly different view.



## Are you covered?

As I see it the Insurance industry has not had much experience of Millennium Bugs. Flood, Fire, Famine, nuclear accidents and all the normal catastrophes and Acts of God it can deal with, providing they are not in the usual long list of exclusions like Acts of War somewhere in the back of your Policy Document.

Most insurance companies have therefore taken the view that while there may be no risk they are not going to cover it. In other words anything which does happen as a direct result of the Millennium Bug will not be insured. This is not a comforting thought if the heating system fails and all the pipes freeze. The onus would be on you to prove it were not related to the Bug. At least we Acorn users will not be attempting to claim for new computers.

Pages 9 and 10 of the booklet deal with a subject dear to everyone's heart – Personal Finances. It has been estimated that if every bank account holder in the country withdraws just an extra £300 the whole money supply for the country would dry up overnight.

Now £300 is not a lot for a holiday which extends up to two weeks. Fortunately the Bank of England has been very busy printing large amounts of extra cash to cover this contingency. How it gets into the cash machines I do not know but my advice would be to arm yourself with something which has been slowly going out of fashion in these days of plastic – the cheque book. That way you are not entirely reliant on either cash or plastic. Page 16 mentions service and petrol stations and filling up the car. Again we have got used to queues at petrol stations as major holidays approach.

Well they do not get any more major than the Millennium. If every car owner attempts to fill up it is obvious there will be petrol shortages and that despite the fact that most service stations are staying open over the holiday period. I suppose statistically at any one time one-seventh of all car on the road are driving with mostly full tanks (if anyone wants to do the stats and prove me wrong I would be most interested).

Again the advice is not to panic and my personal advice is not to attempt, under any circumstances, to hoard any petrol. It's dangerous, probably illegal and the only safe place for petrol is in the tank.

From what I have said so far it should be obvious that two things are true: Acorn computers are much more likely not to have problems with the Bug and secondly that any other problems are likely not as a result of the Bug but of the general population reacting to the holiday but changing the patterns of their normal lives. Buying more food, getting more cash or buying more petrol and all at the same time.

It seems obvious that most of those problems can be avoided by just a little forward planning. I know for a fact how much work has gone on in this country into avoiding problems of computers crashing with the Millennium Bug. I have been personally involved with it for the past two years.

There will be incidents but nothing like on the scale of the excellent new Nike commercial showing a man out jogging while civilization collapses around him – very funny. Personally I would not fly and would be very circumspect about going abroad but that may just be me and it only remains for me to wish everyone a happy, safe and Bug-free Millennium. END


mico
A Serious Performer
Quality, Performance, Expandability
ARM powered, RISC OS 4 computers
Telephone for full details and colour brochure or see our web site.
Educational discounts are available. Schools can register at our web site to gain access to our education site.
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Telephone number 01274 618774
FAX number 01274 619482
email address sales@microdigital.co.uk
web site www.microdigital.co.uk

# It's good to talk

*John Pettigrew goes bulk postal*

E-mail is having a huge effect on the way people talk to one another. However, we often want to talk to more than one person at a time. For example, a local club might want to be able to let everyone know about meetings or a software author might want to let users ask questions about it. Some of you will probably be thinking 'why not use a newsgroup?' There are several reasons why you might not want to do this – you increase your risk of getting unsolicited e-mail (spam) by putting your e-mail address on the public groups, there might not be a newsgroup on the subject and, most particularly, it might be a private matter, or only of interest to a few people.

One way round these problems is to use an e-mail list. At its simplest, an e-mail list can simply be a group of people with each others' e-mail addresses and who send e-mails to each other. Such a manual list can be useful for a few people or a short period of time but, if the group grows or carries on for a long time, it can be a nuisance if some people don't send their messages to everyone, or carry on sending e-mails to someone who doesn't want them.

## List servers

Fortunately, there are programs known as list servers, which receive e-mail sent to a specific e-mail address (such as 'mail-list@foo.bar') and resend it to everyone who's asked to be part of the e-mail list. They also set the header fields so that you can see who sent the message but, when you reply to it, you reply to the group's e-mail address. For the users, it works very like a UseNet newsgroup, except that the e-mails arrive in their mailbox rather than in a newsgroup.

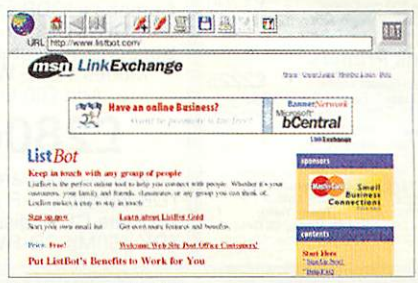
Setting up a list server can be a complicated affair. You have to get the correct software and install it, configure it correctly, and make sure that your computer is online often enough that e-mails get sent around the list quickly. This is all a difficult task for most people. However, there is an easy way around this.

There are various services around the world that have set up list servers and let anyone create their own mailing lists. This means that you just need to ask them for an e-mail address to use for your list and tell people about it. Even more surprisingly, several of these sites provide the service for free (see box).

Of course, nothing in life is totally free, and the 'free' mailing list servers usually make their money from advertising; the ads appear on the web sites used to create, find and manage the mailing lists, and also as short text ads added to the bottom of each e-mail. In my experience, however, the ads are usually unobtrusive (three or four lines of text) and definitely worth the hassle you save.

## How do I do it?

To create your own mailing list, visit one of the sites. First, it may be worth checking to see whether there's already a list for your interest – if you're setting up a list for a club, there probably won't be but if you're wanting to connect people with an interest in needlepoint there might. The process differs between the various sites but usually involves simply deciding what e-mail address you want to use for the list and providing some information about the list's purpose and likely membership (used for the service's marketing). Once the list is created, you can set some options you want for the list.




*Starting up on ListBot*

- The sites will often let you keep an archive of messages to the group; if you've deleted a message you received and later want to read it, you can visit the web site and read it.
- You can control a mailing list by appointing a moderator. The moderator can decide who can join or post to the list, which is useful for keeping the list on target – for example, to make sure that only club members can join a club list.
- The members usually have a choice of how to receive messages – either to get each message separately (the obvious way) or as a digest, which combines many messages into one that may be sent out once a week or whenever there are enough messages.

## Next time…

Mailing lists offer several advantages over newsgroups for some purposes (especially privacy) and, by using public list servers, aren't hard to set up and run. However, there are times when you want a public newsgroup. Next month, I'll be showing you the steps involved in creating one. END

### Free mailing-list service

| | |
|---|---|
| CoolList | http://www.coollist.com/ |
| eGroups | http://www.egroups.com/ |
| ListBot | http://www.listbot.com/ |
| ListHost.Net | http://www.listhost.net/list/free.htm |
| OneList | http://www.onelist.com/ |

Showroom open Mon-Sat 10-18.00 hrs (All prices INCLUDE VAT) Carriage not included

# RISC OS Computer Systems

**- Please ring regarding availability (Carriage £15)**

| Computer Model with | 15" Monitor | 17" Monitor | No Monitor |
|---|---|---|---|
| Acorn Sprinter NC 16MB, 10BaseT with Mse/Keybd | £485 | £625 | £350 |
| A7000+ Classic 8Mb, 1Gb HD | £803 | £663 | £528 |
| A7000+ Classic CD 8Mb, 1Gb HD, 24xCD | £721 | £866 | £586 |
| A7000+ Odyssey CD 16Mb, 4Gb HD, 40xCD | £780 | £920 | £645 |
| A7000+ Odyssey Secondary 16Mb, 4Gb HD, 40xCD | £839 | £979 | £704 |
| A7000+ Odyssey Surf 24Mb, 1Gb HD, DVD, 56k, ANT | £956 | £1096 | £821 |
| Riscstation NetWORX 8Mb, No HD, 10BaseT | £604 | £744 | £469 |
| Riscstation R7500 Lite 16Mb, 4GbHD, 48CD, 10BaseT | £721 | £866 | £586 |
| Risc PC SA233T 8Mb, 2GbHD, RO3.70 | £1015 | £1155 | £880 |
| Risc PC SA233T 18Mb, 4GbHD, 40xCD | £1167 | £1307 | £1032 |
| Risc PC J233T 34Mb, 8GbHD, DVDCD | £1227 | £1367 | £1092 |
| Risc PC Web Wizard 34MbHD1.7Gb+32CD | N/A | £1350 | N/A |

- Web Wizard includes 17" Monitor, 80W Speakers, 56k modem & Software
- ANT Suite, Easiwriter Professional with MS Word 6/7 compatibility. We only use quality monitors which are Samsung SM550b for 15" and Samsung SM-750p for 17" except for Web Wizard which is generic.

# D-Link ISDN Hub/Router £230c

## Connect up to 6 computers to the Internet with just ONE single ISDN dial-up[1] internet account!

This amazingly easy to use unit is suitable for RISC OS, PC, Mac & Unix computers and compatible with BT ISDN/HomeHighway services. It provides;

- 128kbps Multilink PPP ISDN with compression & PAP/CHAP security.
- Connection to TWO ISDN sites simultaneously.
- A SIX port 10BaseT Hub for networking to each computer[2].
- TWO analogue telephone ports for standard telephones, faxes & modems.
- DHCP Server for automatically configuring computers for the network.
- Built-In Telnet server for configuration & diagnostics[1].
- Flash upgradeable for user-installable future firmware upgrades.

**Ring now for further information.**

[1] - ISDN line and ISP account not included. [2] - Each connected computer must be equipped with a 10BaseT network card. NOTE - PSU, Network cabling for ONE computer and ISDN Cabling is included with the unit.

# Tektronix®

**Colour Laser Printers (Carr £15)**

Phaser 740L A4 1200dpi Mono £1320
- Colour upgradable, 16ppm, 16Mb RAM, 10BaseTEther.,
- Parallel, Postscript Level 3, PCL5, 136 Fonts. 1yr warr.

Phaser 740N A4 600 dpi Colour £1700
- 1200dpi Mono, 5ppm Colour/16ppm Mono, 32Mb RAM,
- 10BaseT, Parallel, Lev3PS, PCL5, 136 Fonts. 1yr OSM.

**Colour Solid Ink Printers**

Phaser 840N A4 1000dpi Colour £2225
- 10ppm, 32Mb RAM, 10BaseT, Parallel, Level 3 PS,
- PCL5 (colour), 136 Fonts. Colour upgradable. 1year OSM.

| Tektronix Consumables | |
|---|---|
| 740L Colour Upgrade | £Call |
| 740 Std Black Toner | £71 |
| 740 Lrg Black Toner | £90 |
| 740 Std CMY Toner | £147 |
| 740 Lrg CMY Toner | £210 |
| 740 Fuser | £182 |
| 740 Fuser Roll | £58 |
| 740 Imaging Kit | £175 |
| 840 3 Black ColorStix | Free |
| 840 5 - CMY Stix | £146 |

**The price of colour consumables are PER colour. Toner Yield; Std 6k Mono, 5k Colour Lrg 12k Mono, 10kCol**

# CD-RW & CDBlaze



**Yamaha CRW6416**

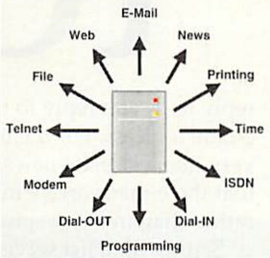
Recordable & Re-Writeable Internal SCSI CD-ROM drive complete with Cumana's !CDBlaze, cables, CDR & CDRW Disc and PC software. Supports multi-session, MMC, Audio Modes 1 & 2, Write-on-the-Fly. Add £60 for External.

## £280c Inc

| | |
|---|---|
| !CDBlaze (Software Only) | £80a |
| TDK 650Mb CD-R disc | £2a |
| Traxdata CD-R discs (Box10) | £15c |
| TDK 650Mb CD-RW disc | £14a |

# LinServer Internet Gateway

**LinServer - An Internet Gateway & File Server running LINUX (UNIX® for PC's) which supports PC, NC & RISC OS Computers**




LinServer is an incredibly robust and dependable File, Print & Internet Gateway server providing virtually every internet resource AND it doesn't cost the Earth! There are NO licensing issues on the number of users supported. LinServer supports over 10,000 users, the limit being only storage capacity and RAM. It supports PC's, Network & RISC OS computers. You can literally place this server in a secure room and forget about it, being almost completely self maintaining except for user administration.

**Standard features;**
NFS, LanMan file server
- with disc quota's
POP3/4, SMTP
- Mail Server
NNTP News Server
Web/Proxy Server
FTP Server
Printer server
Internet dial-on-demand
- using ISDN or modem
Dial-in modem access
RISC OS Server Tools
... Plus many more.

**Contact us now to for further details or to arrange a demonstration.**

Happy Christmas and a Happy New Millenium Year to ALL

## Monitors (Carriage £10)

Older computers will require an adaptor £12

**Samtron 15" Monitor £135**
FST, 0.28" dp, 1024x768, 30-54kHz & pre-sets.

**Samsung 17" Monitor £199**
SM750S FST Tube with 0.28" dot pitch

**Samsung 17" Monitor £275**
SM750P FST Tube with 0.26" dot pitch

## Memory

**Following prices strictly whilst stocks last.**

**Risc PC/A7000 SIMMS**
32Mb £65a | 64Mb £Calla

**Risc PC VRAM**
1Mb 2nd user £20a | 2Mb £79a

**Call for details of memory for other models.**

## Hard Drives/Interfaces+

**Carriage: a=£2, b=£6, c=£8**

**Hard Drives**

Quantum 10.2Gb IDE £115b
Cheetah 4.5Gb SCSI £Callc
10,000rpm Cheetah drives useful for VideoDsk
Simtec IDE Interface £55a
Supports up to 4 AT devices including Hard Drives, CD-ROM drives and zip drives.
Add £15 for A3000-A4000 version.
Cumana SCSI II Card £175b

## CD-ROM Drives

**Internal CD-ROM Drives**

Toshiba 36xCD **ATAPI** £40c
Cable & Fitting Kit £10a
Compatible with RISC OS 3.60 or greater.
**Add £55 for External Drive**
- A suitable cable will be required for ext units.

## I³ Networking (Carr. £6)

All cards are 10BaseT only for Combo add £10

A30X0 EtherLan 101 £110
Archi EtherLan 511A+ £110
RPC/A7k EtherLan 601 £110
All ethernet cards include Acorn Access+

## Modems/ISDN (Carr £8)

Budget 56kVoice Modem £75
3Com 56k Voice Modem £85
3Com 56k Message £100
**D-Link ISDN2 Router £230**
- ISDN Router with 6 port 10BaseT hub & Two
- analogue phone ports, which can take
- incoming ISDN calls and full NAT.
ANT Internet Suite II £115a
9-25 Archi or PC Wired Modem Cable £12ea.a
3-way Serial T-Switch (incl. comm. cable) £32b

## Portable Computers

**Carriage: a=£2, b=£6, c=£8**

Psion 5 8Mb RAM £Callc
- includes PsiWin Link
Psion Revo 8Mb £Callc
AutoRoute Express £10a
- one of the best packages for the PBII/3a
PsiRisc £67a
PsiRisc with Cable £Calla
PsiRisc cable (for 3c/3MX) £28
Ser.3/3a Mains Adaptor £15a
Ser.5 Mains Adaptor £15b
Backup Battery £3a

## RiscPC Upgrades

233MHz StrongARM £299b
- Includes RISC OS 4.02
233MHz StrongARM £Callb
- Includes RISC OS 3.70
586-133 PC Card (512kb) £225c
PC Pro v2(without PCExchange) £35a
Windows '95 CD (Full) £80a
- Can be installed without any prev OS present
2nd Slice without PSU £90c

## Printers (Carriage £8)

Epson 460 (720x720dpi) £115
Epson 640 (1440x720dpi) £135
Epson 740 (1440dpi) £175
Epson 760 (1440dpi) £195
Epson 860 (A4) £245
Epson Photo EX (A3) £375
HP LaserJet 1100 (8ppm) £295
HP LaserJet 2100 (8ppm) £550

## Zip/Jaz Drives

**Include Our JazZip tools**
- £10 if purchased separately

Ext Para zip + 6 Discs £125c
- add £29 for RiscOS Parallel Driver
100Mb ATAPI Zip Drive £60c
- suitable for Simtec IDE card.
100Mb zip cartridge £11a
Pk of 6 zip discs+caddy £46b
Jaz 2Gb Internal £295c
Jaz 2Gb External £305c
Jaz cartr. 1Gb £68/2Gb £73a
Carriage: a = £2, b = £6, c = £8, d = £10

## Scanners (Carriage £8)

**Epson Colour Scanners**
Include !TWAIN & ImageMaster for RISC OS. Bundles include software for PC's/PC Cards

GTx-7000 SCSI bundle £245
GTx-9500 Para bundle £Call
GTx-9500 SCSI bundle £Call

## Hardware Upgrades



**£15 Incl**

200W (PMPO) Speakers
- Incredibly good sound at the price

Citizen DD Floppy Drive £30b
- Suitable for A3000, A300, A400 &
- A540 series machines.
Citizen HD Floppy Drive £20b
- Suitable for all machines except A3000, A300
- A400, A540 series machines. Please note
- this drive respects the HD hole explicitly ie
- you cannot format HD discs to DD & vice ver.
Joystick I/F (Not Risc PC) £5b
Logitech Mouse (Acorn) £20a
RISC OS 4 Upgrade £116b
Scart Cable (9 or 15 pin) £12a
Serial Upgrade (A3000) £29a

## CD-ROM Software

**RiscCafe (JAVA) £39.00a**

ClipArt CD 1/2 (CC) £21a each
Hutchinsons Encyclopedia 92 for RiscOS £6a
Hutchinsons Encyclopedia 97 for PC only £5a
RiscDisc Vol 1, 2 or 3 CD £5a each
TopicArtCD (DTP) £3a
TOTS TV CD £19a

## Games (Carriage £2)

**Prices below whilst stocks last**

Birds of War (4D) 2Mb £5a
Break 147/Superpool (4D) £5a
Crystal Maze (Sher) Floppy £28 / CD £28a
Dungeon (4D) £5a
E-Type II (4D) £5a
Fire & Ice (Times Warner) £23a
Frak (A7000/RiscPC) £14a
Lotus Turbo Chall2 (Kris) £5a
Real McCoy 2/3/4/5 (4D) £5a each
Saloon Cars Deluxe (4D) £5a
Simon the Sorcerer 2Mb £27a
Stunt Racer 2000 (4D) £5a
Virtual Golf (4D) 2Mb £5a
**Wolfenstein 3D (SA Compatible) £5a**

## Applications

100 Monotype Fonts £20a
ANT Int. Suite £115a
ArcFax £32a
Card Shop £23a
Compression £5a
DataPower2 £165b
DrawWorks Des £27a
Eureka v3 £105b
Fairisle £10a
FastSpool+ £19a
HTML Edit 4+ £47a
ImageFS2 £43a
MidiSynth+ £5a
MidiWorks Light £10a
Mr Clippy Site Licence £15a
PC Pro v2 £38a
ShapeFX £5a
SparkFS £24a
Web Design T'kit £28a

## Educational (Carr. £2)

**10/10 Series £14a each**
Early Essentials (over 7), English (6-16yrs), French (8-16yrs), Junior Essentials (5-11), Maths (Number) (6-16), Maths (Algebra) (6-16), Maths (Statistics) (6-16), Maths (Geom'y) (6-16), Spelling (over 9), Essential IT, Geog.,

Anagram Genius £5a
FunSchool3 (u5, 5-7, or over 7) £22a
FunSchool4 (u5, 5-7, or over 7) £22a
Wizards Revenge £18a

## Books (No VAT)

**Carriage: a=£2, b=£6, c=£8,**

Budget DTP (Dabs) £5a
Graphics on the ARM £5
RISC OS 3 First Steps £5a
Wimp Progr for All £10a
- complete with disc

## Printer Consumables

**Carr: Cartr - £2 , Toner - £8**

**Epson Cartridges**

S020047 Black £19
S020089 Colour £19
S020093 Black £19
S020108 Black £19
S020189 Black £19
S020191 Colour £19

## Printer Consumables

**Canon Cartridges**

BC-02 £16
BC-20 £23
BC-21 £32
BCI-21Bk £8
BCI-21C £15
BC-22 Photo Cart £39
BCI-60 Black £25
BCI-61 Colour £18
BJI-201HCbk Black £9
BJI-201bk Black £6
BJI-201C/M/Y £8 ea.
BJI-642 Black £13
BJI-643 Black £18
BJI-643C/M/Y £23 ea.

**Hewlett Packard**

HP51625A Colour £24
HP51626A Black £23
HP51629A Black £23
HP51649A Colour £24
C3903A (LJ5P/6P) £64
HP92274A (LJ4L) £54
EP-L (LBP-4) £64

**Ink Refills**

Single Black £5
Single C/M/Y/R/G/B £5

## Terms & Carriage

**Carriage: a=£2, b=£6, c=£8**

**Carriage:** To benefit personal callers to our showroom carriage is itemised seperately. The carriage indicated is for single items. Please call us for total carriage when ordering more than one item since it is not cumulative.
**Terms:** All prices include VAT except books. Carriage is not included unless otherwise stated. Carriage charges apply to mainland UK (excluding remote areas, Scottish Highlands, Channel Islands, IOM), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Re-stocking fee on non-faulty returns. Educ Inst official orders accepted. E&OE.

## Where to Find Us





# Desktop Projects Ltd

Unit 2A, Heapriding Business Park, Ford St, **STOCKPORT**,
Cheshire. SK3 0BT. www.desktopp.demon.co.uk
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JAN 00

# Play my silver machine

*Matthew Atkinson explains how Silverball came to be*

**S***ilverball* started life in '92 but was put aside for several years due to a heavy commitment on the 10/10 projects. It was resurrected a few years ago due to the amount of work done on it and a desire to see the project completed. This incarnation is complete with a table and environment editor.

As the program is quite complex I have chosen to concentrate on the most important aspects of the game namely ball movement, ball – ball interaction and ball/flipper interaction.

## Moving balls

*Silverball* provides for the adjustment of several variables to be applied to the table in order that different conditions might be simulated that are not possible in the real world or would be difficult.

A ball's motion is made up of two components: X vector (Xv) and the Y vector (Yv) see Figure I. These control the movement of the ball around the table, indeed a good deal of the program is involved in operations on these vectors to provide the proper motion of it.

Gravity is provided by the simple addition of a negative Yv, the magnitude of which is determined by the slider in the editor section. On a real table this is proportional to the sine of the angle of tilt of the table, see Figure II, the upper limit being the gravity of the Earth. Special consideration must be given to balls that are resting on objects such as guiders or pins so that they do not suddenly have a very large negative Yv when it comes to moving them off.

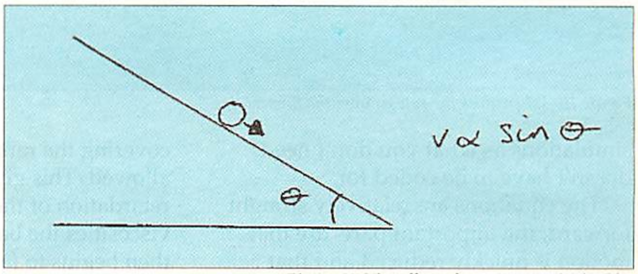


*Figure II: The effect of gravity on tilted tables*

## Viscosity

In physics, the resistance of a fluid to flow, which is caused by its internal friction, is called viscosity. It applies to the motion of an object moving through a fluid as well as the motion of a fluid passing by an object depending on your frame of reference. This property is generally ignored in most pinball

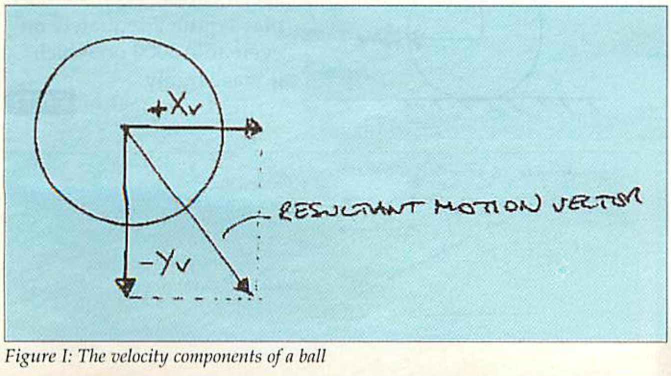


*Figure I: The velocity components of a ball*



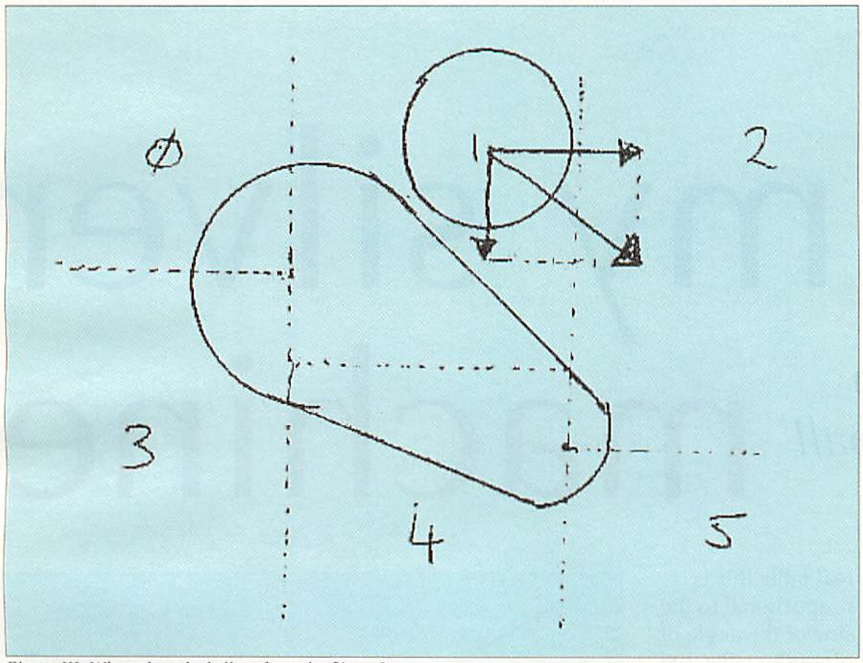



*Figure III: Where does the ball go from the flipper?*

simulations as what you don't need doesn't have to be coded for.

The equations are relatively straight forward, the important parts are that motion is quickly reduced and that there is a "terminal velocity" A velocity that cannot be exceeded for a freely falling object in a fluid. Here it is simulated by checking for this terminal velocity which is the sum of the squares of the motion vectors, the terminal velocity having been calculated prior to start of the game, and then checking if it has been breached. If the terminal velocity should be exceeded the motion vectors are scaled back accordingly.

The motion vectors are scaled within each loop of the game according to a pre-calculated table covering the range of viscosities allowed. This gives a pleasing retardation of the ball motion, at high viscosities the ball quickly stops and then begins to fall.

*Silverball will be on next month's cover CD*

## Ball-ball interaction

Interestingly there is no general solution to the problem of two moving balls in collision. The solution adopted here was firstly to calculate which of the balls had the highest velocity by summing the absolute ball velocities, Xv and Yv, and then a simple compare.

The interaction is then treated as a moving ball and a "stationary" ball, which is adequately documented elsewhere, the motion vectors of the stationary ball are simply ignored. This gives quite a realistic interaction. Many ball interactions are treated as separate ball-ball interactions, indeed that is the way they are presented by the collision detection routine to the program. There is a resulting loss of energy, up to half, as the "stationary" ball vectors are discarded. In practice this presents no problems (it would present problems with a snooker/ pool type game). Generally, on a pinball table, the velocity do get quite high from all the interaction with the pins and so have to be scaled back.

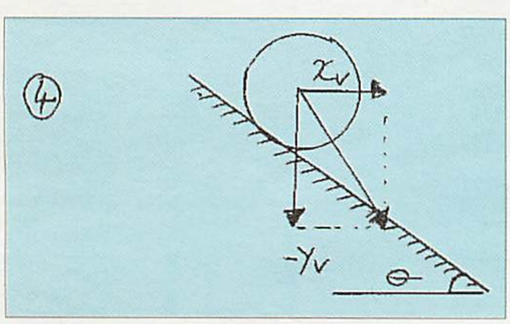
## Flipper-Ball

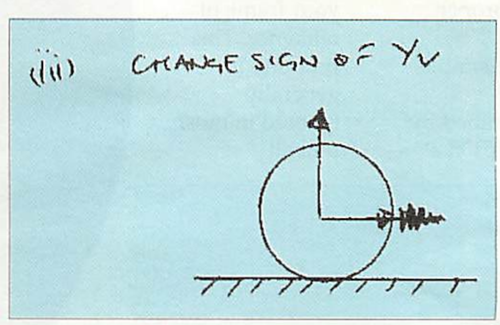
This is where a pinball game can live or die as it is the prime means by which a player gets a feel for the game. By a series of simple compares it is possible to determine which of the possible areas a ball is in relation to on the flipper. This reason code is then used as a vector to a specially written piece of code which is specific to that area.

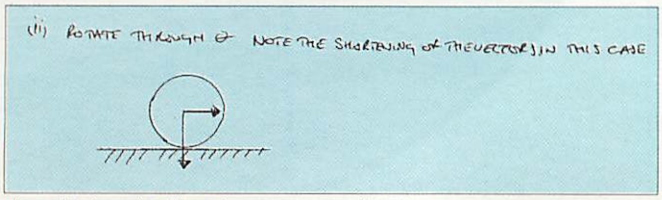
For instance, see Figure III, the ball has collided with a stationary flipper. We know the angle of the flipper so the motion vectors can be rotated around this angle so that it becomes the simple case of a bounce off a horizontal surface for which the sign of the Yv is reversed. Then it is rotated back by the minus angle of the flipper and the ball movement is correct, see Figure IV. Special coding has to be done for the more difficult parts and a moving flipper is quite complicated.

Many games these days seem to pride themselves on the level of accuracy they represent, a sort of "specification war", while singularly ignoring that enhanced gameplay does not necessarily follow from greater and greater levels of accuracy. Something to bear in mind when you write your next game.

*Silverball* was written entirely in integer machine code and reflects the conditions at the time of starting to write the game: namely the requirement to run on all ARM-based computers. If it was written today a language such as C++ would be infinitely more suitable with its floating point capabilities but, in general, a faster machine would be the base specification. As it stands it plays quite adequately on even an A3000 on which it was largely written. END



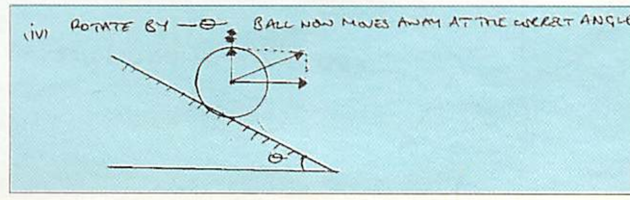




*Figure IV: A moving flipper is even more complicated*

# Zip 250 vs Orb

*Alasdair Bailey goes into storage*

New removable storage devices come onto the market every month, this issue we take a critical look at two of the best.

## Zip250

The new Zip250 drive is the 250Mb successor to Iomega's hugely popular 100Mb drive. In common with its predecessor, the Zip250 comes in three forms: a low-cost printer port version, SCSI and internal ATAPI. This review looks at using the internal ATAPI drive with Alsystem's SoftSCSI drivers.

Once removed from its clever packaging, the drive must be installed into a free 5.25in or 3.75in bay. However, this may pose a problem since most RISC OS machines only include space for one hard drive, a floppy drive and one further 5.25in bay usually occupied by a CD-ROM drive.

So, if your IDE interface is full, you have two choices: a slightly slower parallel port drive; or a third-party IDE interface – then move an existing device to that. Clearly, the first option will be preferable for most users. In operation, the three formats of drive are very similar so the conclusions drawn in this review may be applied to any one of them. The internal version of the Zip250 is well designed and its cream coloured front will look good in any computer. The external versions of this drive exhibit stylish dark blue cases which make a nice change from the usual dull visuals associated with computer peripherals.

As can be seen from the table, the Zip250 drive offers rather disappointing data transfer rates compared to other storage devices. This is a limitation imposed by the drive itself not by Alsystem's software. Additional 250Mb discs cost about £15 which is an expensive 6p/Mb.

The Zip250 drive is slow but does have one major advantage: you can use it to give large files to others. The 100Mb discs have become almost a standard where large files are used. The new 250Mb drive maintains compatibility with the old discs. This makes the drive ideal for transferring files from computer to computer – even to PCs.

## The Orb

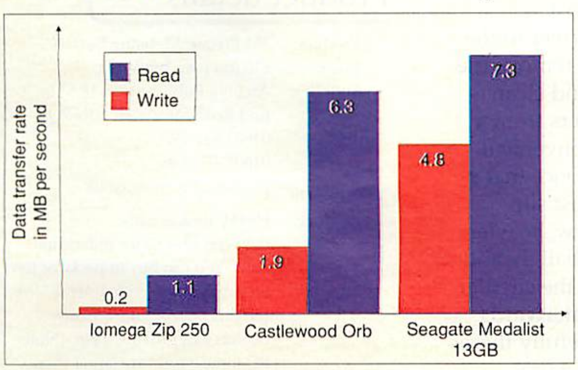
This rather mystical-sounding device is a removable hard drive in the same vein as SyQuest's offerings a few years back. Each of the Orb's cartridges holds a tidy 2.2Gb of data.

As with the Zip drive, the Orb needs to be installed in a 3.75in drive bay though adapters are available to allow it to occupy the larger 5.25in bays. The drive itself is robust and well-designed – as are the cartridges being completely enclosed in a sturdy plastic.

The Orb is a reasonably high-capacity drive and its speed, which is almost comparable to a decent static hard drive, means that it should find use in more than just backup applications.

Cartridges could be used to contain entire PC card partitions or even comprehensive music collections in MP3 format. Sadly all of this comes at a price.

The Orb drive currently retails at £209 and you'll also need an APDL IDE interface to make use of it. However, once the initial investment has been made, additional cartridges cost a mere £39 – just 1.8p/Mb.




*File read and write times compared. Readings were made using a StrongARM Risc PC and were taken using HDSpeed. The 13Gb Seagate drive is included for reference purposes.*

## In conclusion...

These drives serve different purposes. If you're looking for a reliable backup device and additional storage space the Orb is for you. However, if transferring files to others and backing up a few essential documents is your game the cheaper Zip250 will do the job.

STOP PRESS: APDL have just let us know that they plan to produce drivers for the parallel port version of the Orb drive. The drive and software will retail for around the £250 mark and are due to be ready early in the New Year. END

### Product details

| | |
|---|---|
| Product: | Iomega Zip250 and RISC OS drivers |
| Prices (inc VAT): | £116 (internal), £176.25 (parallel); additional 250Mb discs cost £14.99 |
| Supplier: | Alsystems Ltd, 47 Winchester Road, Four Marks, Alton, Hampshire, GU34 5HG |
| Tel: | 01420 561111 |
| Fax: | 01420 561100 |
| E-mail: | sales@alsystems.co.uk |
| Web: | http://www.alsystems.co.uk |
| Product: | Castlewood Orb drive |
| Prices (inc VAT): | £209 (bare drive & one disc), £284 (drive, standard APDL IDE interface and two discs); additional discs £39 |
| Supplier: | APDL, 39 Knighton Park Road, Sydenham, London. SE26 5RN |
| Tel: | 0181 778 2659 |
| Fax: | 0181 488 0487 |
| E-mail: | info@apdl.co.uk |
| Web: | http://www.apdl.co.uk/ |

# Precise mousing

*Dunstan Orchard sorts out a sticky mouse problem*

It must be one of the most infuriating things that can happen to me while I'm using my computer. I've just spent the last five minutes cutting-out, with infinite care, an image in Photodesk, I'm nearly finished and…oh! Damn it! The pointer squiggles all over the screen as my mouse sticks and ruins the operation.

This has been going on for quite some time: I try and do something, the mouse refuses to co-operate, I shout at it, take it to bits, clean the rollers, put it back together, and we start all over again – glide, glide, jam, squiggle, curse. Why don't I just buy a new one?

I've been promising myself a new mouse for about the last eight months now, I'll buy one of those fancy Logitech ones I thought, they look nice, ooh, how about a cordless one? Very nice, and how much are they? Oh really! Crikey that's a lot. Ah well, I'll just stick with the one I've got, it's not really that bad … glide, glide, jam, squiggle, aargh! Luckily my brother came to the rescue when he suggested I buy a heavier mouse ball.

At the same time I happened to see an advert for 3M's Precise Mousing Surface – their rather lovely mouse mat. A quick glance at my current mat (the first incarnation of the Precise Mousing Surface) confirmed that it was looking a bit smooth and worn out. A couple of calls later a 3M mat and a heavy mouse ball were winging their way to me in the post.

## Fitting

These are the two easiest fitting jobs you'll ever do to your computer. To replace the mouse mat just pick your old mat up, throw it in the bin and place your new Precise Mousing Surface in it's place. You do not have to be earthed. To fit your new mouse ball just turn your mouse over and twist the circular section shown in Figure II in the direction that the arrows indicate (anti-clockwise in this case).

When you've got the cover off, and the ball is out, take a peek inside. Have the three rollers got a line of black muck on them? If they have you can do one of two things, either poke about inside with a flat surface, scraping the muck off, or you can take a screwdriver to the mouse, remove the cover and clean the rollers from a more convenient angle. Once that's done, just slip your new, heavier mouse ball in, and replace the circular cover afterwards.

Hopefully these two measures should result in glitch-free mousing for a while – although a build-up of muck on the rollers is inevitable, so take a look every now and then to make sure they're not too bad.



*Figure I: 3M's re-designed Precise Mousing Surface*

## Wonder mat

So what's so good about this particular mouse mat? If the accompanying literature is to be believed it gives a more consistent contact with your mouse, eliminates slippage, and limits the amount of dust and fluff that can clog up your mouse rollers. All this in a mat that's so slim my ruler can't even measure it. Oh, alright it can, it's 1mm thick.

I've been using the 3M mats for three years now, ever since Paul Beverley at Archive Publications started to advertise them (he sells several hundred each year, so I'd say that they are fairly popular). It's a fairly cheap and sensible way of maintaining a good mouse action. So, that's it, these products are hardly new but I did think it was worth bringing them to your attention, they saved me buying a new mouse after all. **END**





*Figure II: Twist the circular section clockwise to release the ball*





*Figure III: Once the ball's out you can poke around inside to clean the rollers*

### Product details

| | |
|---|---|
| Product: | 3M Precise Mousing Surface |
| Price: | £10 (no p&p inc VAT) |
| Supplier: | Archive Publications, 18 Mile End Road, Norwich NR4 7QY |
| Tel: | 01603 441 777 |
| Fax: | 01603 460 736 |
| E-mail: | paul@archivemag.co.uk |
| Product: | Heavy mouse balls |
| Price: | Between £1 – £2 for individual balls. You can buy in packs of ten |
| Supplier: | Stuart Tyrrell Developments lent me this one, but most Acorn dealers can provide them. (Note: PC mouse balls are larger than Acorn ones, so best to buy from an Acorn dealer.) |

# All in one place

## *Steve Turnbull examines the opposition*

This was certainly something of a curiosity to me – the subscription-only *Archive* magazine, edited by Paul Beverley, has been around since 1987 (just a newcomer really) and hasn't been something I've read on a regular basis. But here I am reviewing his *Archive CD* for Volume 12 of the magazine and I had no idea what to expect.

Apart from the extreme difficulty in getting the CD out of its case without damaging it, I was very relieved to discover the review copy wasn't one of the infamous Bagpipe versions – the CD duplicator managed to mix up some Archive CDs with Bagpipe music CDs. Never one to knuckle-under in adversity Paul is turning this mix-up into a charity event.

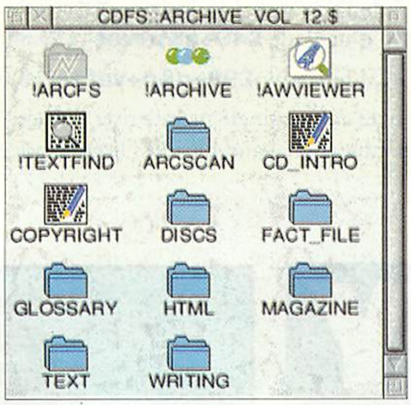
To the CD itself: Bringing up the Filer window gives you the read-only version of *!ArcFS*, an information application called *!Archive*, the ubiquitous *!AWViewer*, something called *!TextFind*, a couple of text files and the data directories.

What an Archive CD contains is the entire contents of the previous year's magazines: The articles, the programs and anything associated with it. In fact the actual layout files (in Impression format) of each magazine is provided. It also includes (and this is the fifth) all the contents of the previous years' CDs. So this one contains Volumes 4 to 12 – previous to Volume 4 the magazine was produced on an Apple Mac and the conversion would be problematic.

This year sees the instigation of HTML versions of all the magazines – a cute trick made easy by the development work on *TechWriter* by Icon Technology. *TechWriter* can import *Impression* DDF format, and can export HTML. Problem solved, as Mike Cook used to say. The only irritation is that there is no "binding" HTML, which means you have to search done through several directory levels manually to locate the issues' HTML files, you can't start at a high level HTML index page.

The *TextFind* application has access to all the articles in text format and, given keywords, will search every article from Volume 4 to Volume 12 providing a list of which issues it found matches and the lines that contain the match.

Being very egocentric I looked for "turnbull" only to find Colin Turnbull and Richard Turnbull – I




was in there was well but came away somewhat chastised. The search took a couple of minutes even on a StrongARM however I can't see you wanting to do this sort of thing a lot so it's not really a problem.

The Glossary is bound to be a god-send to many people, there are two files (in text, HTML or Impression formats) containing definitions for *audio-visual* -related words and for more commonplace computer terms. Very handy.

The FactFile (in the usual three formats) contains a comprehensive list of Acorn-related companies, with the caveat that it may very well be out-of-date, there is a means of distinguishing companies that have definitely produced something relatively recently, as opposed to those not known to have done so.

The magazine's hints and tips are held in separate text files which makes them easier to look at, apart from Volume-related files, there are two files containing the entire selection in date order (up and down). The most interesting thing about these is that they have the information for Volumes 1 to 3 as well. Also on text format are product listings from Volume 1 to Volume 12 which is pretty scary.

Apart from the monthly issues Paul has also created a number of specials: The A5000, the A4, a DTP Guide, an earlier FactFile (which is included for completeness, I wouldn't recommend believing what it says), one for Acorn's launch of the A3010, A3020 and A4000, and, of course, one for the Risc PC.

Then there's the software: All sixteen of the Careware discs, a lot of shareware discs; the utility discs; the magazine discs and all the documents and software to go with Gerald Fitton's articles on Colton Software's products *Pipedream*, *Resultz*; and *Wordz*. This is a remarkable CD, though it contains up-to-date material, with the most recent issues of *Archive*, it is also an historical document.

While its lineage may not stretch back into the furthest depths of Acorn's history it does run from the launch of the 32-bit machines: the Archimedes was launched in June 1987, the first issue of *Archive* appeared in October of that year. Amazing. END

### Product details

| | |
|---|---|
| Product: | Archive CD Volume 12 |
| Price: | £10 |
| Supplier: | Archive Publications, 18 Mile End Road, Norwich NR4 7QY |
| Tel: | 01603 441777 |
| Fax: | 01603 460736 |
| E-mail: | paul@archivemag.co.uk |
| Web: | http://www.archivemag.co.uk |




# Power play

## *Max Palmer uses more TopModel features*

Last month we took our first look at *TopModel*. In particular, we concentrated on the user interface, navigation tools and saw how objects can be broken down into points, primitives and nets. We also introduced the two fundamental types of objects supported by *TopModel*, bezier surfaces and polygonal structures, and explored the behaviour of the object creation, selection and manipulation tools.

This month, we build on the foundations laid down in last month's tutorial by tackling a real design challenge. Namely, to construct a three dimensional set of chess pieces. While this task might not seem quite as exciting as designing a new level of Tomb Raider, or constructing a futuristic space station, the shape of each piece, while superficially quite similar, requires the application of a different set of tools in order to create the model. As such, it should provide a good opportunity to explore a number of key modelling techniques and will also hopefully demonstrate how *TopModel*'s tools can be combined, with relative ease, to obtain some impressive results.

### Better by design

There are six different pieces in a chess set, each poses a particular challenge for the modeller. If you have a chess set to hand it's worth digging it out and examining each of the pieces. Alternatively, take a look at the rendered versions I have produced in Figure I. Study each piece and try to work out how you might go about recreating the structure. What are the complex aspects of each piece and what would be easy to reproduce? Can you break the shape down into simple parts? Are there any details you could safely ignore`?

These are exactly the kind of questions which you need to ask yourself each time you set about modelling an object, since the answers will enable you to plan how the object can be recreated, step-by-step.

In the case of the chess set, some of the pieces have relatively simple shapes, such as the pawn, whereas others are quite complex. However, the six pieces share a common feature which can be used as the basis for the models. Part of the base section of each piece is circularly symmetric – that is to say, if we were to take a vertical cross-section through a piece, we would discover that the lower part of the cross-section looks the same, regardless of

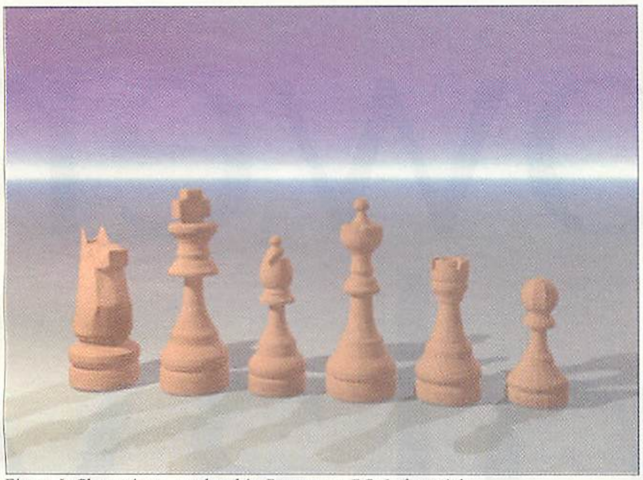


*Figure I: Chess pieces, rendered in Bryce on a PC. Left to right, knight, king, bishop, queen, rook, pawn*

the angle at which the cross-section is taken. This is a good thing, since we can model this section using the sweep tool. It also provides an ideal starting point from which each of the pieces can be reconstructed.

My first task was to create the circularly symmetric sections of the chess pieces. To make the task easier, I took width and height measurements from a real chess set, to ensure that the relative proportions of the models were correct and used *Artworks* to draw the profiles, since I find its line tools easier to use than *TopModel*'s (Figure II). Once done, each partially complete cross-section was exported from *Artworks* as a drawfile and imported into *TopModel*.

## Common origin

The pawn is actually completely circularly symmetric and could be constructed in one operation by sweeping its vertical cross-section about the z-axis. However, to make drawing the profile easier and the finished model more accurate, I decided to construct it using two objects, a lower 'swept' section and a spherical top.

To create the sweep, the drawfile cross-section was imported and positioned with the central (vertical) axis at the origin. The profile was then selected, and the sweep tool invoked (specials ->sweep). To give the base a smooth look, the number of polygon divisions was increased from 12 to 20. Finally, a sphere was added to the top of the sweep using the default construction tools and converted to polygons using the cover surfaces tool (edit->cover surfaces).

Like all conversions from surfaces to polygons, it is possible to increase the accuracy of the conversion by increasing the number of grid points used to create the polygonal mesh (known as UV points). However, in this case the default grid settings were thought acceptable (see Figure III).

All of the chess models started life as a swept profile. However, unlike the pawn, the other pieces required more than just a sphere to top-out the design. Rather than give an exhaustive and somewhat tedious description of the steps involved, I shall concentrate on the creation of certain features which serve to illustrate commonly used modelling techniques. A macroscopic breakdown of the tools used to create each of the pieces is provided in Figure IV.

## Partial sweeps

The previous section has shown how the sweep tool can be used to create the base of a chess piece by sweeping a cross-section through 360 degrees.

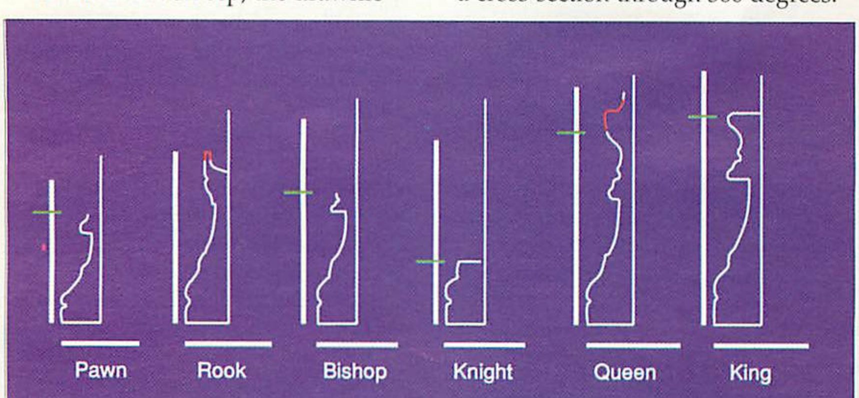



*Figure II: Drawfile outlines of cross-sections used with the sweep tool*

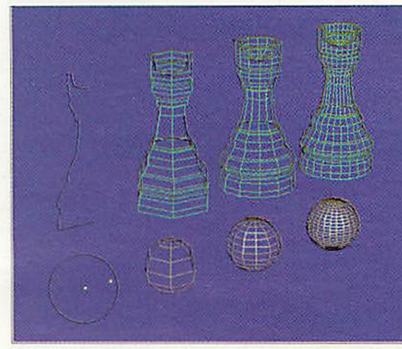


*Figure III: Increasing the number of polygon divisions, or UV coordinates when covering surfaces results in finer detail*

However, the tool also allows the angle, z-step and origin of the sweep to be specified, making it possible to create partial sweeps and more complex, spiral shapes. This technique was used to make the upper portion of the rook's 'battlements', which incorporates a series of regularly spaced gaps.

To form the crenellations, the cross-section was positioned above the base of the tower so that the two sections aligned to form a continuous curve. Before invoking the sweep tool, care was taken to make sure that the origin of the sweep, defined by the location of the axes marker, matched that of the tower. If this is not done, the edges of two swept objects would not line up, causing an obvious discontinuity between the two sections.

To overcome this problem I selected the tower and used the 'bring-to-centre' option (Control+Menu) to bring the origin into line with the principal axis of the tower.

Next, the upper profile was highlighted and the sweep tool selected. I decided that four gaps of about 20 degrees would be adequate to define the structure of the battlements, leaving a 70 degree sweep for each section of the 'wall'. This figure was entered into the sweep dialog and seven polygon divisions chosen to match the 10 degree spacing used to create the tower.

The resulting sweep yielded one section of the battlements. The others were produced using the copy tool.

First, the item to be cloned was selected, using 'select entire nets' mode, and the copy 'set-up' dialog invoked (edit->setup). This dialog provides a range of options for copying objects, allowing copies to be scaled and rotated with respect to the previous copy or a path to be used to define the position of the clones. However, in this case only a relatively simple sub-set of the

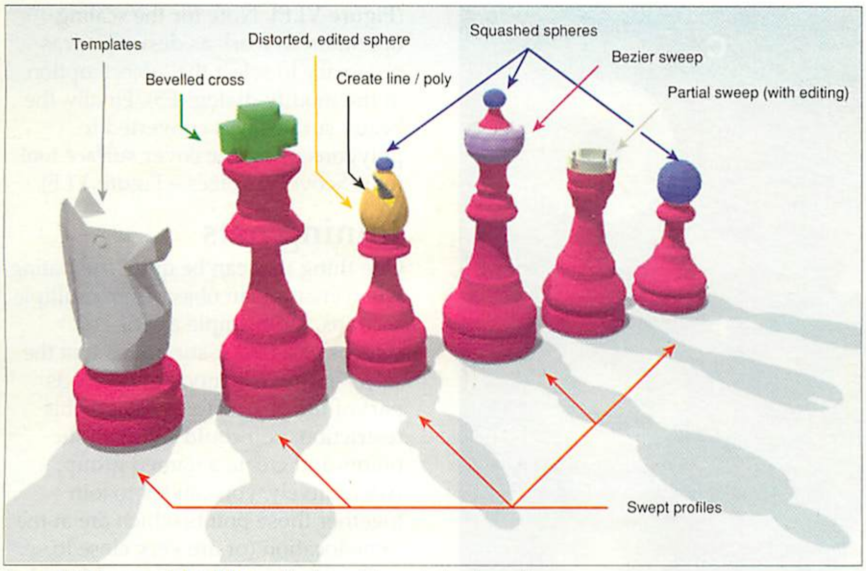



*Figure IV: Macroscopic breakdown of tools used to create the chess pieces*

available options were needed, our requirement being to create three clones of the battlement section, rotated about the central z-axis of the tower.

To ensure that the rotation axis for the copy operation was the Z-axis I switched to a plan view before entering any values into the set-up dialog. I then entered '3' into the number of copies edit box, checked the 'about viewpoint' option (which sets the origin of the rotation to be the location of the axis marker in the XY plane) and pressed the button labelled 'circular' to select a circular copy operation. Since the scene was being viewed from overhead, the copy tool 'magically' entered the correct value for the angular step into the Z angle box (90 degrees). All that remained was to click copy.

## DIY editing

While the copy operation appears to complete the creation of the rook model, a switch to flat shaded mode reveals a series of holes in the structure, indicating that the model is not yet finished (Figure V). The reason for the presence of these gaps is that the sweep tool does not 'fill in' the ends of a swept object, we have to do that ourselves using the create line/poly tool. The create line/poly tool is located in the 'Specials' area and is extremely useful. It is the tool you turn to when all of the other high-level object creation tools fail you. I therefore like to think of it as the 'do-it-yourself' editing tool.

The create line/poly tool allows us to select a number of points which we wish to join together. If we select two points and then use the tool (Shift+Control+L), we get a line connecting the two selected points. If we select three or four points, we will obtain a filled polygon. By selecting appropriate points, and re-applying tool we can connect together two separate objects, or fill in a hole that might have been created after editing an object.

In our case, we wish to use the tool to fill in the holes in our model. Although the tool allows a polygon to be created from up to four selected points, it is safer to join together groups of three points since it gives us direct control over the triangulation process. Figure V illustrates how the gaps in the rook model were filled by selecting groups of points, rotating our scene (to make selection easier) and using the create line/poly tool to create new polygons.

## Bezier sweeps

One of the more subtle features of the queen is the bumpy effect that is visible on the upper ridge of the piece, just below the pinnacle. At a guess, this undulation is meant to represent a crown and is one of the distinctive features of the piece. Although this structure looks as though it might take quite a bit of work to reproduce, it is actually quite easy to model using a bezier sweep and a bit of manipulation.

A bezier sweep is the same as a normal sweep, except that the profile used for the sweep is a bezier curve as opposed to a series of straight line segments, and the number of divisions are specified in terms of bezier rather than polygon divisions. Fortunately, *TopModel* retains the 'bezier nature' of bezier curves when importing drawfiles. Alternatively, curves may be converted into straight line approximations using the 'linearised' option in the import dialog.

To create the crown I imported a bezier curve for the region of interest and positioned it relative to the rest of the profile (and axis marker – Figure VI.A), before creating a 360 degree sweep with 36 bezier divisions (Figure VI.B). Next, I switched to an overhead view and

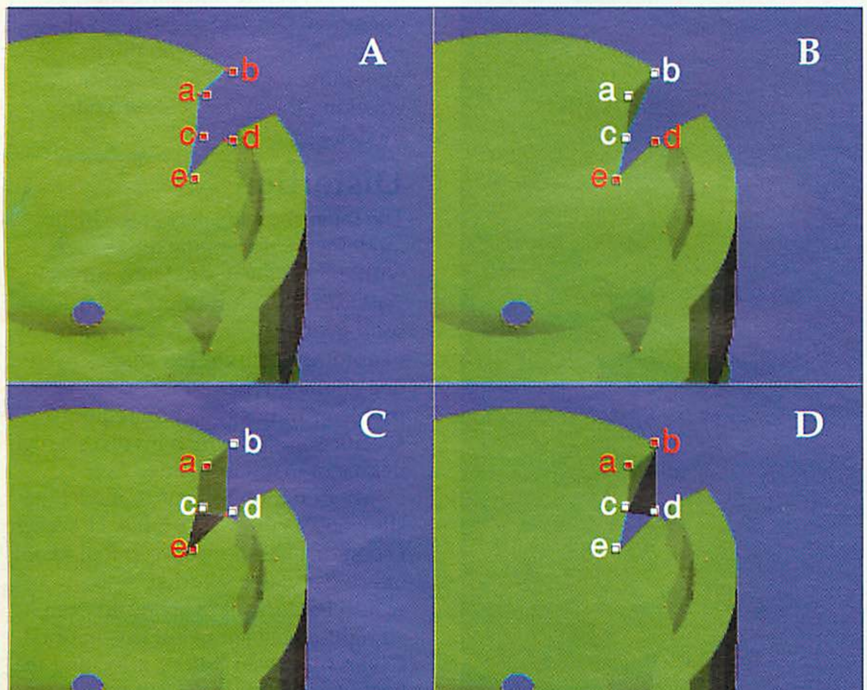



*Figure V: Using the 'Create Polygon' tool to fill in the gaps in the rook model*

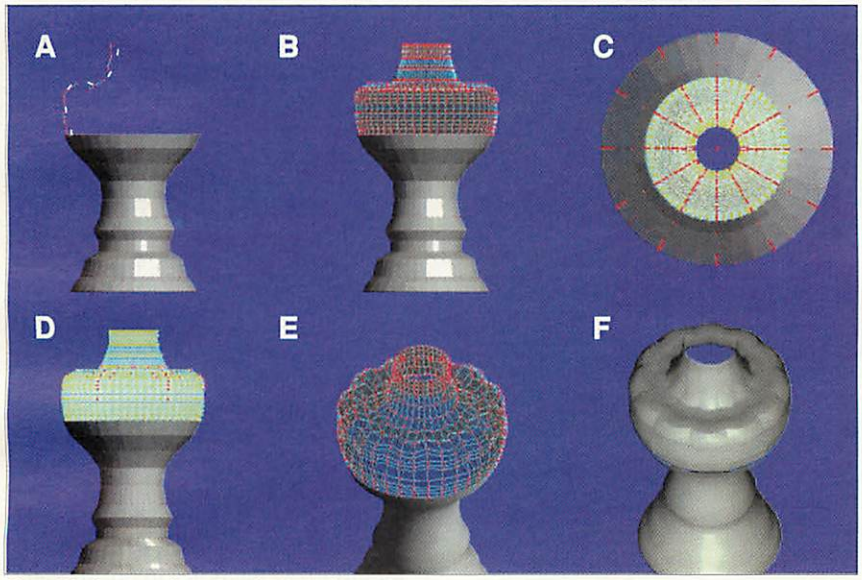


*Figure VI: Stages used to create the 'crown'*

selected all points lying on the horizontal and vertical axes. I then manually adjusted the view by entering values into the Pan/Rot/Zoom dialog (menu over magnify icon), in order to rotate the queen about the z-axis by 30 degrees. After each rotation I selected more points on the vertical and horizontal axes and continued this process until one in every three bezier 'spokes' were selected (Figure VI.C).

Once done, I switched to a side view, making sure I didn't deselect the 'spokes'. I then used a shift drag to deselect those points that were not within the vertical region of interest for creating the crown (Figure VI.D). Finally, I switched back to an overhead view.

By employing the selection process described in the previous paragraphs, I was able to select the points I required to create a regularly spaced deformation of the bezier surface.

This was produced by scaling the selected points in X and Y by about 90 per cent, deselecting more points in the vertical plane and re-scaling until the right 'bumpiness' was achieved (Figure VI.E). Note for the scaling operation to work as desired it was necessary to select the 'object' option in the modify dialog (F5). Finally, the bezier surface was converted to polygons using the cover surface tool (edit->cover surfaces – Figure VI.F).

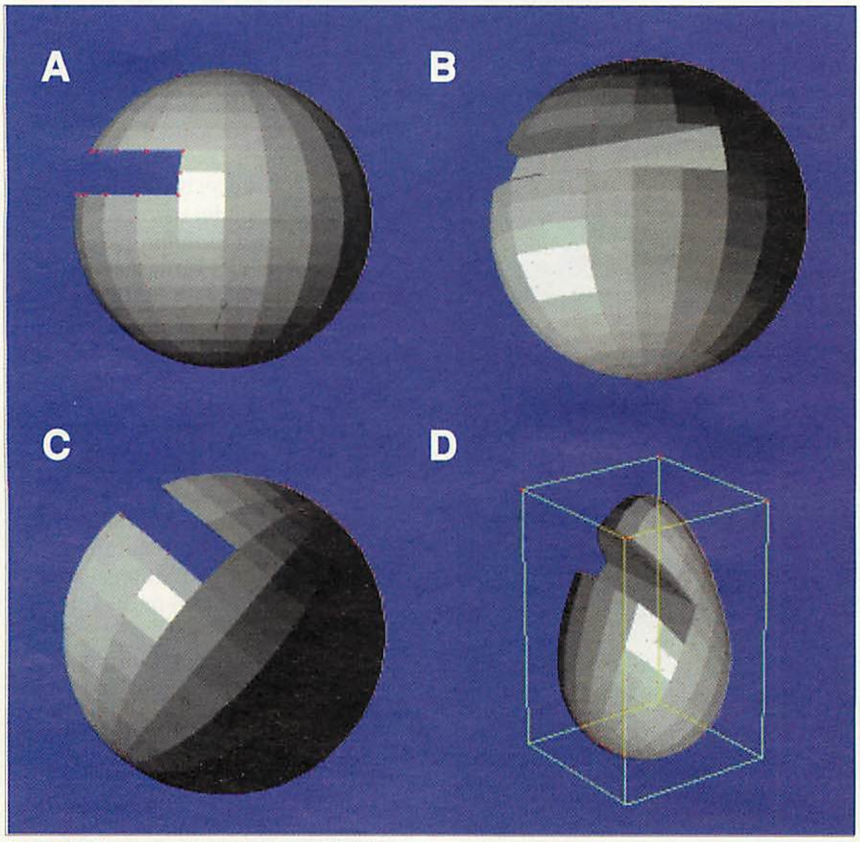


*Figure VII: Stages used to create the top of the bishop*

## Joining nets

One thing that can be quite frustrating when creating an object from multiple sections, for example a series of sweeps or a bezier surface, is that the select entire nets mode only selects part of the object. To overcome this restriction, you could select all the points and create a named group. Alternatively, you can try to join together those points which are at the same location (or are very close to each other) using the join tool in order to create a single net (Shift+Control+J).

While this technique may not always be appropriate, most objects of this type are created using sections which are designed to create a 'seamless' look.

If care is taken when modelling two neighbouring sections, it should be possible to weld overlapping points together once the individual sections have been finished. This may be done by selecting the points in the vicinity of the seam and applying the join tool.

You can tell if the join has been successful by monitoring the number of points in the 'Objects Info' (F7) dialog. If the number of points stays the same, try increasing the 'tolerance join' value in the 'Options' dialog (Shift+F9) before repeating the operation. Don't increase this value too much though, or you might end up joining together unrelated points, wrecking the appearance of your model.

## Distortion

The most complex part of the bishop model was creating the top section with the cut-away slit. Unfortunately, *TopModel* doesn't support constructive solid geometry, so there's no easy way to automatically cut out shapes from one another. What is certain is that problems of this type will require a specific solution which involves a high degree of manual editing.

My first thought was to model the slit using a cut-away profile. However, I soon dismissed the sweep tool as not offering a viable solution, since it would be difficult to create an even, straight-edged slit using this method. Given this observation, I decided the best way to create the slit was to use a sphere as the base object and refine its shape using the manual editing and distortion tools. After converting



Figure VIII: The knight, rendered in TopModel

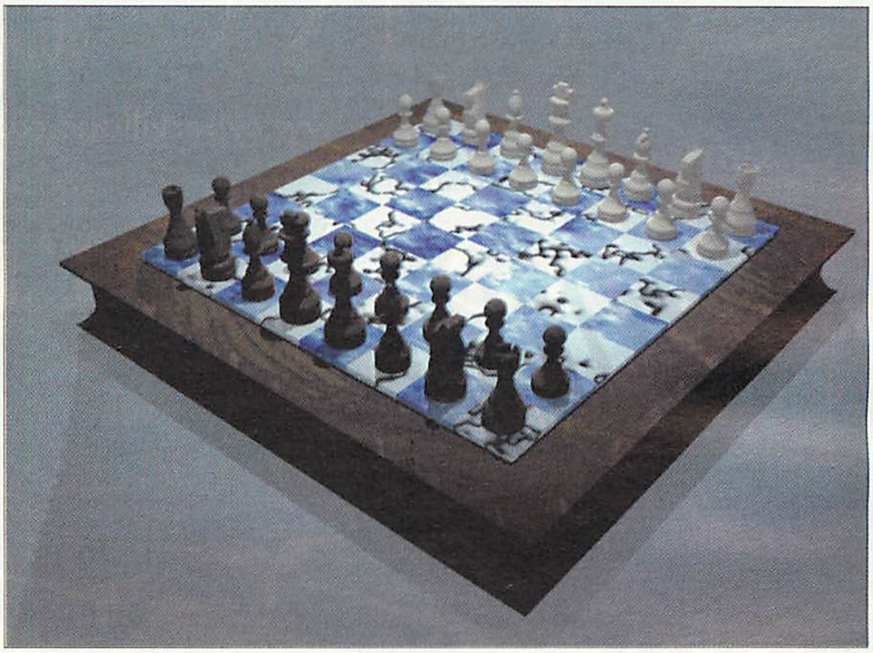


Figure X: Finished chess board

the sphere to polygons, I cut away a section of the net in the horizontal plane to create the slit (Figure VII.A), thus creating a straight edge and used the create line/poly tool to recreate the surface within the cut away section (Figure VII.B).

Next, I rotated the sphere through 45 degrees and selected the linear distortion tool (Figure VII.C). My aim here was to use the distortion tool to mould the sphere into an egg-like shape. This was achieved by altering the position of the control points to enlarge the base, while drawing out the top section. Further, minor refinements were made using the bezier distortion tool which provides greater control over the distortion process. The end result is shown in Figure VII.D.

## The knight

As the figures accompanying this article clearly show, the shape of the knight is highly complex making it the most difficult of the chess pieces to model (Figure VIII). In fact, there are many approaches one could take to modelling this piece, ranging from the use of bezier surfaces, to extruding and refining a bevelled outline of the knight using the distortion tools.

I investigated a number of these solutions with varying degrees of success. The main failing being that the techniques were either too fiddly or resulted in a model that appeared much 'rounder' than the real chess piece.

In the end I decided to create a series of templates for the principle faces of the piece, which I drew in *Artworks*. These templates were imported as filled objects and re-positioned using the rotate tool. Adjoining edges were stitched together in *TopModel*, using the join and polygon creation tools, while features such as the eye were created using a low resolution sweep which was manually connected to the surrounding points. Once one side of the piece was complete, the opposite side of the object was created using the mirror tool and the two halves joined together and connected to the base.

The template-based approach was not without its problems, for example, care is needed to ensure that adjacent, non-coplanar template edges are straight wherever possible. It is also highly labour intensive. Nevertheless, aside from a few glitches, I was generally pleased with the outcome.

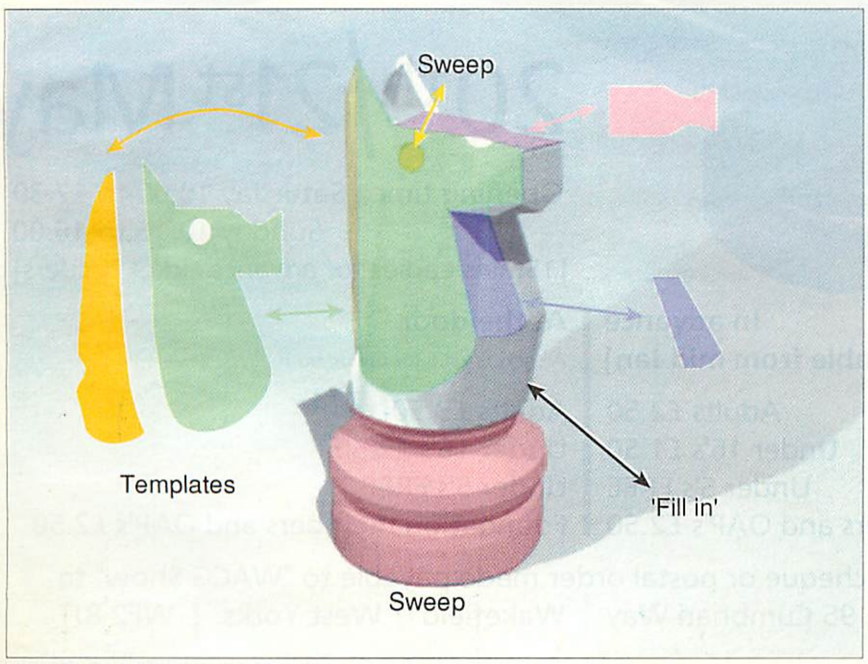



Figure IX: Breakdown of the knight model

## Summary

This month's article has shown how a chess set can be modelled using *TopModel2*. In particular, we have examined the role of the sweep, join, polygon and distortion tools and have shown how they can be used to create realistic models. Next month we'll be looking at more of *TopModel*'s tools. Until then I'll leave you with a rendered version of the complete chess set. Happy modelling...

END

Contacting AU

Max Palmer:
topmodel@acornuser.com

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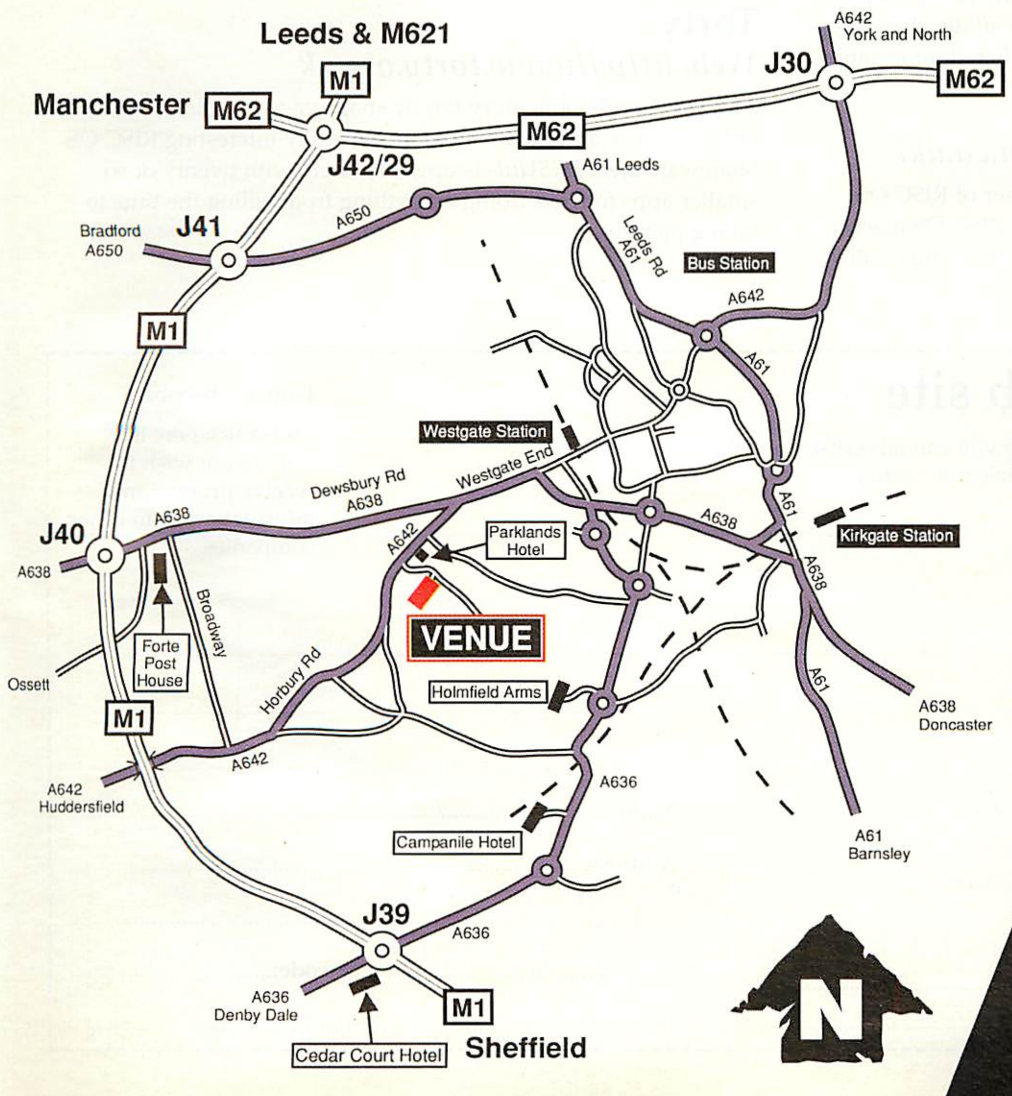
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# WebSearch

## Acorn Arcade
### *Web: http://www.acornarcade.com/*

Acorn Arcade is the leading Web site for information on current RISC OS games developments. Offering news, reviews, features and downloads it's so good we're sure you'll come back.

## AJS Computers
### *www.ajscomps.demon.co.uk*

AJS Computers Ltd, one of the original Centres of Technology, specialising in used Acorn systems of all types.

## China Charity Syndrome
### *http://www.cix.co.uk/~turnbull/*

Steve Turnbull is in training for his next charity bike ride for MENCAP, you can keep up with his progress on his personal Web site plus read about his last ride in through the Sinai Desert – you can even send money.

## Cybervillage
### *Web: http://acorn.cybervillage.co.uk/*

Your one stop shop for Acorn information. The Hotnet section, updated regularly, keeps you up to speed on all developments concerned with RISC OS and associated/affiliated information.

## David Pilling
### *Web: http://www.pilling.demon.co.uk/*

The David Pilling Web site contains all manner of RISC OS goodies for those new and not so new in the RISC OS market. Not forgetting full information on the award-winning *Ovation Pro* dtp package. Come see us now!

## Drobe Launch Pad
### *Web: http://www.drobe.co.uk/*

Drobe Launch Pad is a new Internet Portal which combines links, news and information into one easy to use site.

Drobe RISC Software's Web Development Team have spent over 4 months creating the site to ensure that it gives the maximum functionality possible to all RISC OS users, including up to date news feeds usually only found on the larger, main stream portals.

Features include a POP e-mail checker without banner adverts, a search engine incorporating AcornSearch.com and over 20 other popular engines, up to date news feeds and links to the majority of the industry's Web sites. More features including personalisation are due to be launched in the next few weeks.

## Historical Ipswich
### *http://www.argonet.co.uk/users/happyhoward/*

Historical site looking at Ipswich, Suffolk, through the eyes of a local family. Street names, art, postcards, museums, digs and photos.

## Torty
### *Web: http://www.torty.org.uk*

This site has the obligatory family snaps page, the almost obligatory CV and the much more generally interesting RISC OS Shareware area. *ECSUtils* is upgraded here with twenty or so smaller apps for free, doing everything from telling the time to taking pictures.

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# Starting to draw

Simon Anthony continues his basic guide to draw

Last month introduced new *Draw* users to the wonders of the program we have all had for ages tucked away in our Apps folder. I gave nowhere near enough information for you to attempt the final picture from the last issue yourself but I hope the article gave you the confidence to look for the answers. Now, read on...

When anything is displayed by a *Draw* window it is called an object. An object can be anything from a few thin lines, a circle, a photograph, even a paragraph of writing, right up to a drawing made from lots of lines and curves all grouped together. Any object is a single thing which can be manipulated as a whole entity. It can be grouped with other objects to make a group (gosh) which is also an object. Groups can also be grouped together and the result is still called a group – not a super-group.

The ability to group objects eases the creation and alteration of the drawing. Imagine that you had spent ages getting the shape of a single petal from a flower just right; rather than have to do it all again for each petal wouldn't it be easier to make a copy of that first perfect effort, turn it a bit and stick it down with the original? Yes, I can assure you it would be. But then you have another problem – that of creating a copy of something.

Once you have created your initial object, select it by entering Select mode, you can do this in two ways: The easy way, click your mouse's Select (left) button on the Select icon on the Toolbox, (the arrow at the very bottom) or, the harder way, click the mouse's Menu (middle) button over the *Draw* window and choose the Select option by clicking on it. You can also press F6 from the function keys at the top of the keyboard. This action will make the Select icon on the Toolbox go grey to tell you it has been chosen. Next you have to click the Select button over the object you wish to work on.

Once the object has been selected, it has a red bounding box drawn around it – it shows the size of the object. Now that the bounding box is in place it is possible to manipulate its contents – more of that later. To copy the selected object is simplicity itself, press 'Control+C', which means press and hold down either of the two Control keys and then, while holding it down, tap the C letter key. Hey presto, another object.

If you keep your C key pressed for too

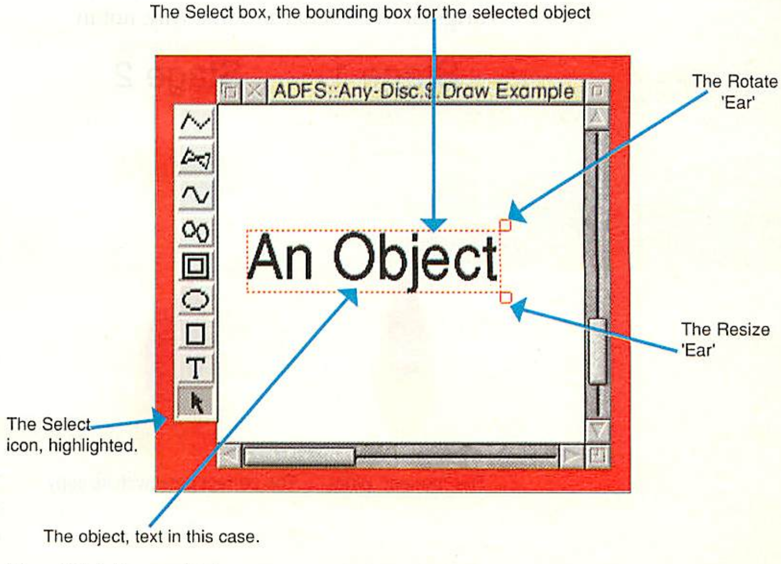



*Figure I: Selecting an object*

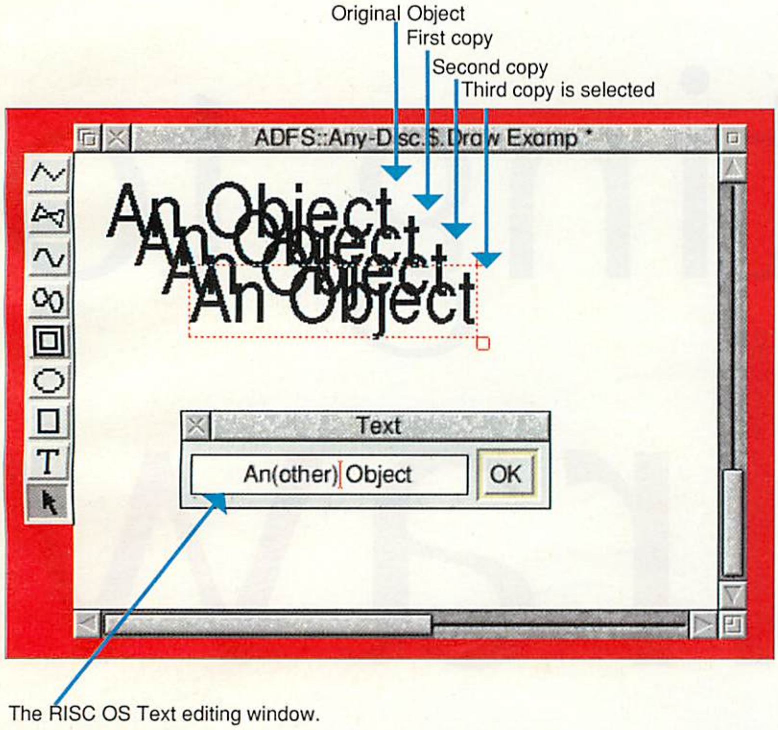



*Figure II: Copying and editing a text object*

long it will auto-repeat, giving you multiple copies – the last copy is always the one now selected

As I've told you how to select something, I'd better mention how to de-select. You can de-select everything using Control+Z, or by clicking with Select in any part of the *Draw* window that doesn't contain an object. Oh and you can select everything with Control+A. The Select all and Clear selection options are also available from the Select sub-menu (go to the Select entry on the main menu and follow the arrow). Each copy can be edited individually as it is totally unconnected with the original. As they are all identical the concept of originality becomes rather blurred, normally we would expect an original to be better in some way, not in computing terms, a copy is unrecognisable from the original in every way save that you may know which came first.

In this example the words "An Object" have been copied three times. The third copy is selected. As this particular object is Text it is edited in its own window. When the editing is complete clicking on the OK icon will place the newly edited version on screen where it came from.

However we were talking about groups. To make a group the first action is to select all the objects which you want included. This can be done in two ways, both needs the mouse and require that Select mode has been chosen.

The first method is to click Select on the first object and then click Adjust (right mouse button) on all the others or click Select outside of any possible bounding box and drag a box around the intended group.

If you want to deselect one of the objects, click Adjust on it and its bounding box will go out. If you want to add objects to this selection which are not near enough to be included in one drag, click Adjust on them one by one or drag a box with Adjust around a second set of objects. Then press Control+G. Now there will be just one bounding box around the group member's extreme edges. The box may look as if it also includes objects which you did not select, but, if you got it right, these will not be included.

Going back to the petal idea, Stage 1 of Figure III shows a group made from three objects. The original object is the outer yellow petal, a copied version of it was magnified by 80%, coloured orange and put in place on top of the yellow master, then an 80% sized copy of the orange one was made, coloured red and put with the other two and grouped. Stage 2 shows again the copy process, but this time of a Group. In Stage 3 the copied group has been rotated by 45 degrees and (roughly) placed as it would be in a flower.

In Stage 4 the result of Stage 3 has been

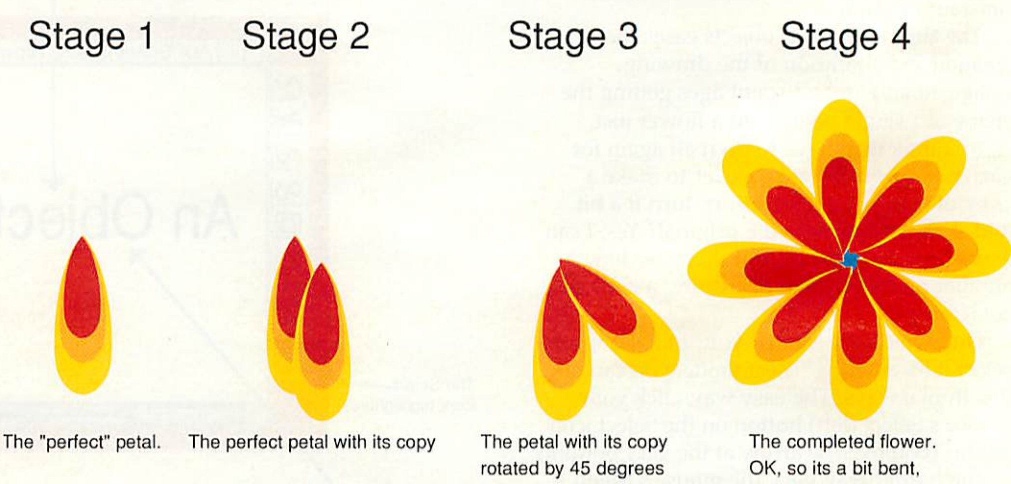



*Figure III: Stages in the creation of a flower*

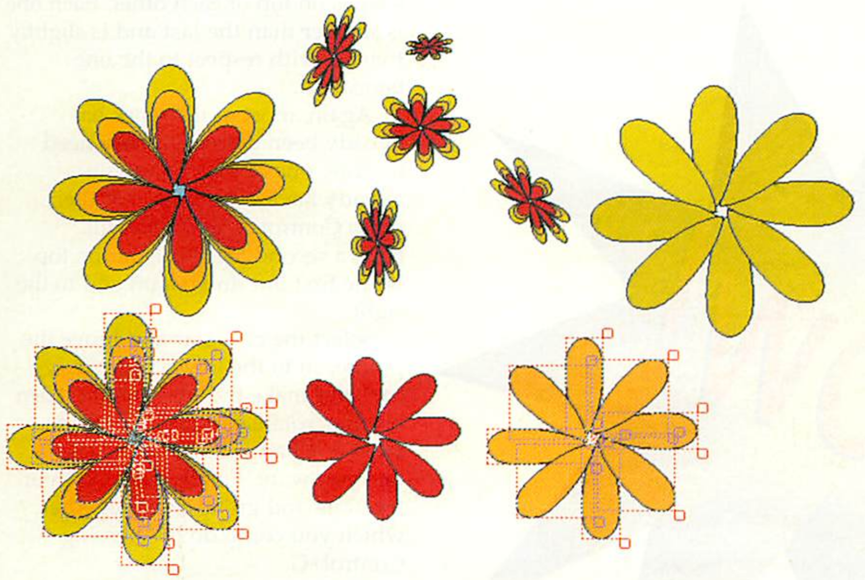


*Figure IV: Manipulating the flower image*

grouped and then copied three more times. Each copy has itself been rotated 90 degrees and put in place. Now that the flower is finished it can be made into a group as well.

Figure IV shows what can be done when you use groups. The final flower has been totally ungrouped to show all the objects which made it up – Control+U ungroups. Once in bits the petals can be re-grouped differently to make the red, orange and yellow versions. To think, it all started with one "perfect" petal. The smaller twisted flowers have been worked on by pulling the 'ears' around.

## Getting layered

What is a layer? In *Draw* it is what you get when one object is covering another. Each object rests in its own layer like magazines on a coffee table. In that analogy the thing at the bottom of the pile (of layers) is very hard to get to and it is also hard to put the top magazine at the bottom. In *Draw* it is simplicity itself to put the top object on a pile to the bottom of the heap, just select it (see above) and press Control+B. This puts a selected object, that is one with a bounding box displayed around it, to the back, that is the one deepest into the screen so to speak – the bottom of the pile.

In Figure V the petal has been ungrouped. From left to right the Select button has been clicked once on the top object, then twice on the top object, then two more times also on the top object, to work down through the layers of the petal, each time putting a bounding box around the petal-part on that level. A double-click digs down a layer. In this example each layer could have been selected separately with a single click as each can be seen, but when this is not possible just keep clicking until the bounding box is around the object in which you are interested.

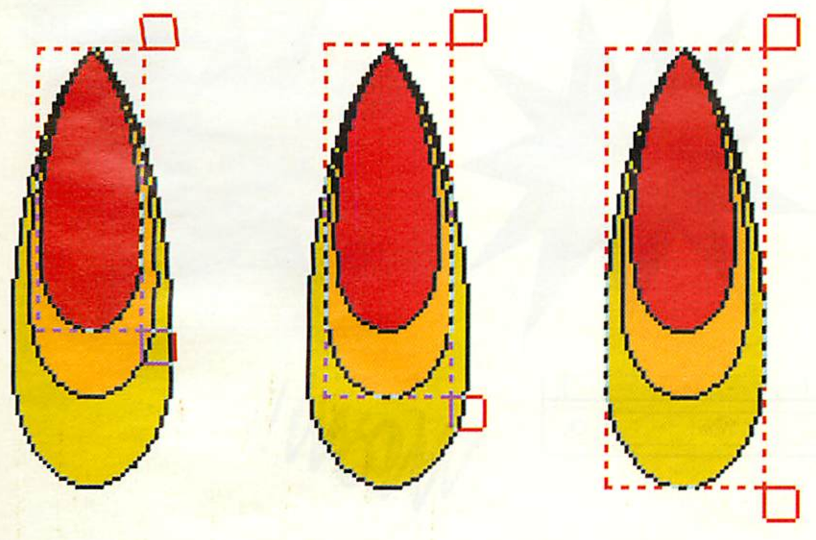


*Figure V: Selecting different layers*

## Time to play

A hint to follow is at all times to read what the menus tell you is possible. Sometimes the options will be greyed out, but you will soon learn why with a bit of playing around. If an option is grey it means it cannot be done on the currently selected object – or that no object is selected at all.

For another example, you can't ungroup something which is not grouped – so the ungroup option would be grey when you select an object made of just text or just a single line. Practice at this stage is very important. It may be easier to experiment with making simple filled colour boxes and wavy shapes now.

Explore the difference between the Open and Closed versions of the straight and curved line drawing tools (the top four in the toolbox). Ignore the Sub-path tool for now, this is the double-box icon in RISC OS 3, or the two lines with the red arrow for RISC OS 4, but try the Ellipse and Rectangle drawing tools – then try these again with the Grid Lock turned on.

The grid is accessed from the main menu with its own entry which leads to a sub-menu. Only the top two options are currently relevant, that of Show and Lock. These are self-explanatory except that they work independently, so the grid can be both on and invisible. This is a very powerful facility which gives absolute accuracy to drawings, down to utterly inhuman levels of precision. Next try making fat and thin lines, even dotted line filled shapes with lines a different colour to that of the fill.

## Meanwhile...

Now we can get down to work on the WOW pic in Figure VIa. Figure VIb, the spider with the blue dots, is its skeleton and Figure VIc, with multiple red rectangles on top, is the same thing in its




*Figure VIa: The target image for the series*

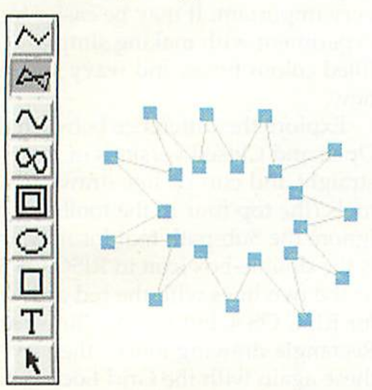


*Figure VIb: The skeleton and control points of the star*

disassembled beauty.

We start with the spider, which is made in *Draw* with the second tool down in the toolbox. This tool draws a connected string of straight lines, each join between segments being marked by a blue square until either Return is pressed or Select is double-clicked.

I find this shape hard to get right, but have no fear because if you get a point wrong while you are making it just press Delete to wipe the last one and try again.

Even after the line has been committed to the screen (when all the blue dots have gone) you can still edit it by entering Edit mode (Control+E or via the menu), to change the shape in this mode – by moving the points – you have to use the Adjust button.

Last month I showed how to fill an object with a colour so I won't cover that again, but here we also have to turn off the line colour to make the final image work well; that can be done from the same menu where object was colour filled – the Style menu – Line colour entry this time. Now comes the clever bit, if you managed to get the star shape to your satisfaction most of the job is done.

Figure VIc shows four of the star shapes on top of each other. Each one is smaller than the last and is slightly twisted with respect to the one beneath it.

Again, most of the work has already been done. You only need to draw one of them, and you already have. Select the star, then press Control+C and you will have a second identical star on top of the first but down a bit and to the right.

Select the new star and move the pointer in to the lower right 'resize ear' and make the star smaller. Then use the 'rotate ear' (my names) to twist it. Change its colour to the one you want. Finally select both of the stars and group them together which you could do by pressing Control+G.

The final stage for the star is one of *Interpolation*, that is getting the computer to work out what mutations the star would have to go through in order to get from the first to the last version.

You have control over how many steps are shown via the Interpolate option from the Select menu. The WOW word is made by manipulating text. By the way, you can't Interpolate text using these methods.

*Next month we will cover Interpolation in more detail as well as Grading.*

END

## Contacting AU

Simon Anthony:
draw@acornuser.com

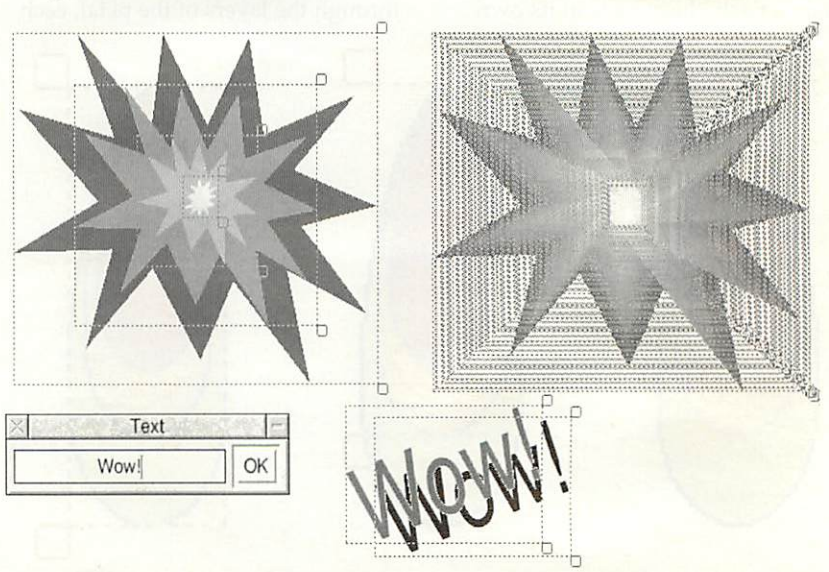



*Figure VIc: The individual components of the final image*

Save up to £35

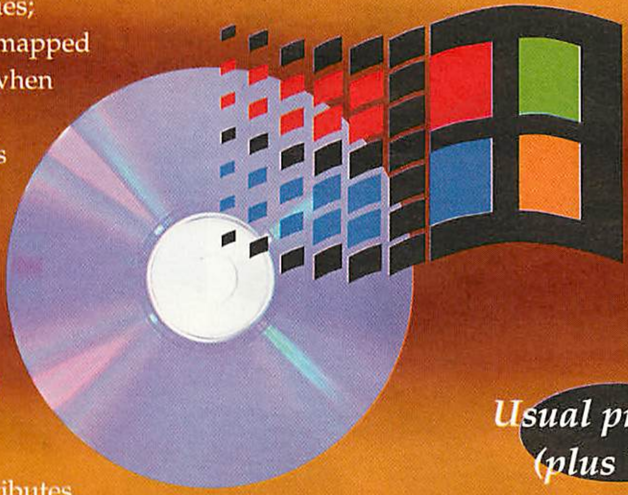
# Warm Silence Software presents

## CDROMFS

A complete rewrite of the filing system part of CDFS:

- Navigation around CDs is faster than CDFS;
- Full support for multisession discs;
- No compatibility worries;
- Filetypes intelligently mapped from their extensions when needed;
- Standard ISO9660 discs are supported with the RISC OS CDFS extensions to allow filetypes;
- Much enhanced, CDFSFiler application;
- Reads Joliet-standard CDs;
- ISO9660 Extended Attributes are now understood;
- and much more besides.

*Usual price £30 (plus VAT)*



## Win95FS

Win95FS is a replacement for DOSFS that allows full access to Windows 95 formatted hard drives, partitions, floppies, Zip, Jaz and Syquest drives:

- Full long filename support (including Unicode names);
- Win95FS supports FAT32 and filetype loss;
- PC partition back-up and restoring without file attribute loss;
- Non-PC card owners can use a DOS-formatted drive to bypass 10 character per filename/77 files per directory ADFS limitations.

*Usual price £35 (plus VAT)*



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Transparently share files or printers between PCs and RISC OS machines:

- Will work without Omniclient;
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- Increases ability to access remote printers and file servers even across the Internet;

*Usual price £35 (plus VAT)*

# Epsom downs and ups

*Alasdair Bailey reports on the Game Scene*

The RISC OS '99 show was a fairly extraordinary one for gamers in that everything that was promised actually materialised. Both the *Heroes of Might and Magic* expansion pack and the RISC OS *Quake* player were on sale on the R-Comp stand.

R-Comp were also able to demonstrate their flight simulator which is still under development. No release date has been set at present, major coding work needs to be done in order to increase speed. At the time of writing the game is almost complete but crawls along at a depressing 8 frames per second even on a StrongARM Risc PC.

Mr Watts, author of Eurofighter Typhoon, the recently released flight simulator was in attendance with a much-updated version of the game which we'll look at next month. Other show news can be found in last issue's report but it was noted that the RiscStation R7500 Lite (they've got to get a shorter name) is due to ship with bundled copies of *BotKiller 2*, *Ankh* and *Frak!* along with many more demos and shareware offerings. It is rumoured that the company's *Evolution* machine is to include something rather special for gamers. Keep an eye on these pages for more details.



*The latest TEK preview picture, it might look good but does it play good?*

## Quake revisited

It's official - *Quake* has finally gone on general release for RISC OS. Those wizards at R-Comp have even managed to tart it up a little over the version we looked at in the November issue. The Resurrection Pack which includes original *Quake*, *Malice* and *Q!Zone* as well as the RISC OS player on disc is available from R-Comp now for only £23. The reduction in price from the original £35 reflects the fact that the game is shipping with an improved version of the freeware player rather than the intended re-write from Martin Piper (again, see the November issue for more info). Pre-orders and refunds for those who payed the full £35 are being processed as I write.

The RISC OS player application has undergone some significant changes since the review a couple of months ago. Namely, things are now noticeably faster than in the freeware version and a nice tidy front-end and installer are included for your gaming pleasure. The occasional crashes which plagued the review version have also been cleared up.

## Artex update

RISC OS gaming house, Artex, are keen to stress that their two long-awaited titles, *TEK* and *Iron Dignity* are still being actively developed for RISC OS. *Iron Dignity* was set for a Christmas release on both the PC and RISC OS but there is little chance of the team making that deadline now which is a pity.

Artex recently released another development screenshot from TEK, their upcoming real-time strategy game. Some have commented that the graphics shown in this picture bear a striking resemblance to those in WestWood's latest PC offering, *Command and Conquer II: Tiberian Sun*, but we'll leave you to draw your own conclusions.

## Emulator update

Sadly, David McEwen has announced that he is to scale down emulator development due to lack of feedback concerning his existing range of freeware emulators over recent months. However, if there is sufficient interest in his emulators as a result of last month's article, he could well be persuaded otherwise. Take a look at his website at http://www.lizjay.demon.co.uk/david/ and be sure to let him know you appreciate his efforts. David and a handful of others have worked hard to keep the RISC OS emulation scene alive over the past few years so it would be sad to see an area where good software is currently available go down the drain.

That's about all we've got time for this month, tune in next time for a full review of the *Heroes of Might and Magic II* expansion pack, *The Price of Loyalty*.

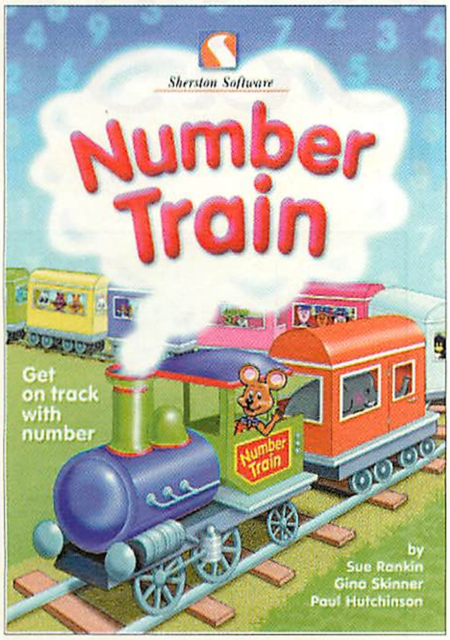
Until then, you can contact me with all your gaming woes on games@acornuser. com or via man-on-a-bike mail to the usual editorial address. END

**Contacting AU**

Alasdair Bailey
games@acornuser.com

# On the right track

Sherston (01666 843216) have another maths title about to leave the fold. Called *Number Train*, the hero of the piece is Murphy Mouse and, with a host of other passengers, he's there to help Reception and Year 1 with over 20 focused maths activities all tied closely to the Numeracy Strategy.




*Number Train* has seven carefully structured areas: addition as combining two to three sets; place value; counting in twos; subtraction as taking away; addition as counting on; ordering numbers; plus odd and even numbers. There are three levels of difficulty and all work is within the range 0 to 20.

The emphasis of the program is on practical activities that make learning about number fun – both during teacher-led sessions and individual pupil use. The advanced level activities have a focus on mental maths.

The CD-ROM has been carefully designed to be simple for young children to use; it is fully narrated, with clear, stimulating interfaces and gentle help and correction routines.

For teachers there is a useful record keeping facility and an easy-to-use options menu to help tailor the program for their own particular needs. Best suited to children between the ages of 4 and 6, the cost is £42.95.

# BBC plan for digital education

Director General Greg Dyke announced that he saw the BBC as having a key role in encouraging everyone to learn especially those who felt alienated by education. "If we can deliver our vision the BBC will have made a major contribution to the learning society – a contribution which arguably no other organisation in the country can deliver. If we don't I fear we will leave millions in our country without an education and, as a result, without a role and without a future."

This vision will involve £200 million a year and an increase in government funding of the Beeb. Digital TV is seen as the centre of this too due to its potential interactivity. The concept is to develop a bank of interactive digital modules to both the primary and secondary curricula.

"It means that tomorrow's school child will have multimedia content at the desktop, subject by subject, lesson by lesson. Classroom learning will become fully interactive." So look out for *learning journeys* on both TV and radio and of course on the BBC's web site.

## Bett 2000

The Educational Technology Show
12-15 January 2000
Grand Hall, Olympia, London
Admission: Free
Contact: 01203 426458
Web: www.education-net.co.uk

## In brief

### Round and around

**A growing number of programs, previously only available on one format, are being re-designed to run as HTML pages on Internet browser software. One such is Vocational Technologies' (01483 579454) Europe in the Round. Launching at BETT 2000 this package provides information at GNVQ level for Business, Leisure and Tourism, Health and Social Care, while providing information for anyone working on GCSE Geography, History and Languages with words and phrases in other European languages. In addition it also contains information relevant to the new Citizenship element of the National Curriculum.**

**The program is split into a series of headings: People and Society, Geography and Travel, Study and Research as well as Business and Work. Choose what you need to find topics on National Identity or Vocational Training among others. The cost is £60.**

### Virtual action

**Kent and Somerset schools are going to be linked in a Virtual Education Action Zone. The idea is to connect pupils and teachers of 24 schools by computer and video link-ups giving children access to the the best resources whether in their own, or a linked, school.**

**This project will last for three years and has £3 million in State funding at its disposal with a further £250,000 a year from private sector sponsors. With a start date of April, every pupil and teacher at each school will have a laptop computer. The principle behind this project is that no school is an island and better communication will lead to higher standards and better results.**

## Diary date

The Education Show – last year's show featured over 600 exhibitors with more than 18,500 visitors. This year's show will again be hosted at the NEC in Birmingham and will take place between 23 and 25 March 2000. Entry is free but pre-registering is advised and can be done online at www.education-show.com

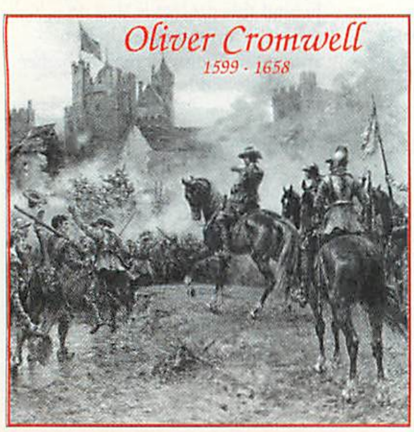
# Insights into the past

*Pam Turnbull takes a tour through the life and times of Oliver Cromwell*

Cambridgeshire Software House have always been good at the *big* productions, their first was the excellent *Frontier 2000* then there was *Burns* for the poet's 200th anniversary year and, of course, *Arthur* which had a considerable amount of exclusive material. So I was looking forward to seeing what they had come up with for *Cromwell*.

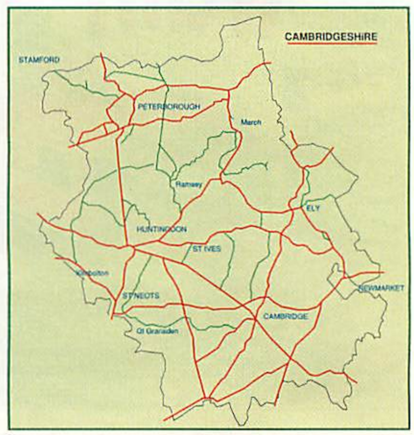
The program structure follows the *quest* formula used successfully before and here there are 20 to follow taking you throughout the British Isles as you chart Oliver's battles and life. He lived between 1599 and 1658 which was a turbulent time of new political ideas and religious fundamentalism. What is more Oliver Cromwell is the only commoner to rule Britain.

Once the program is loaded you need to choose your quest. These are varied and detailed, covering a range of topics and curriculum areas from geography to the Literacy Hour. You could choose to look at the portraits of the main protagonists, examine the life of Elizabeth Cromwell, journey around Scotland or Ireland, peruse Oliver's letters, research into the death of Charles I or follow the plaques celebrating the time which are situated up and down the country. Then there are intricate trails about the politics, battles and sieges of the Civil War itself and detailed visits to the towns of Drogheda and Huntingdon journeying north to Scotland and south to the Channel Islands. And if you're a Cromwell officianado CSH have put together a challenge just for you.




You can feel a tad spoilt for choice but leaving *Medals and their inscriptions* to one side, I opted for a *Short trail on Cromwell's ghosts*. The trails are of differing lengths and I could wish that the Quest Guide would give an idea of the length of each trail before you load it. Choice made I simply dragged the file to the iconbar and we were off.

Surrounding the main window are two sets of icons giving you access to and control over the quest. Along the left-hand side are eight icons – greyed out when not appropriate to a specific screen. These allow you to view associated pictures, information and stories such as the definition and reason for the tactic of *no quarter*, quotes and letters, specific information to the part of the trail, video clips, and information on personalities associated with that place. These can all be saved out and used in other programs, however their main purpose is to provide you with information to solve the clue and take you to the next part of the trail.




*Looking for clues in Cambridgeshire*

You start the trail with the relatively low rank of corporal. Success means your status improves. This is recorded among the icons at the top of the window, along with others which allow you to save your position, zoom in and out, access indexes of hotspots or people, as well as use a timeline and glossary.

The ghosts trail starts in the Basing Area giving you access to Basing House and Basingstoke. A flag denotes your current position and here you need to find the answer to where Cromwell's ghost is supposed to roam. There is a choice of four answers and you can just discover the answer through trial and error but this would be to miss out on snippets of information which are varied and fascinating. For instance, did you know that Inigo Jones, even though in his 70s, was part of the Marquis of Winchester's stand against Cromwell and that he had to be carried from Basing House in a blanket as the puritan soldiers



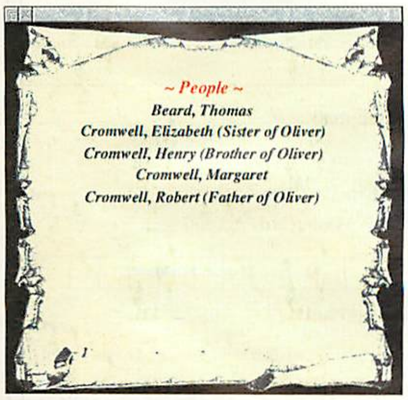
*Following the London quest*

took all his clothes?

Answer correctly and you'll find the clue sheet holds one less destination for you to visit. Next stop for me was Marble Arch. You can get there (no Porsche this time I'm afraid) via the places index or by zooming out to a map of the UK and finding the appropriate hotspot. Not as prettily done as with *Frontier 2000* but be warned you'll soon find yourself intrigued by the names such as Nonsuch Palace and find that you have gone off on a complete tangent and, rather than ghost-hunting, are looking into the life and times of John Lambert.

Back to London and here you can zoom into and scroll around until you find the right hotspot when a new question will appear before taking you to St Ives and then Marston Moor. Complete the trail and receive a certificate plus the new and improved rank of Major General.

After managing one short trail navigation becomes second nature and you'll realise just what depth and detail there is in this package. You need to keep a close eye on the icons which become available or you can miss out on some interesting information such as Chequers, which is home now to Prime Ministers, but was in the Cromwell family until 1912. Pink-edged location markers



*People to look for on a quest*

mean that you can zoom in on these to find a town map, or a photograph of the specific building or place with further hotspots to explore. You need to become quite adept at zooming in and out and I would have appreciated a backtrack button so you could retrace your steps a little easier.

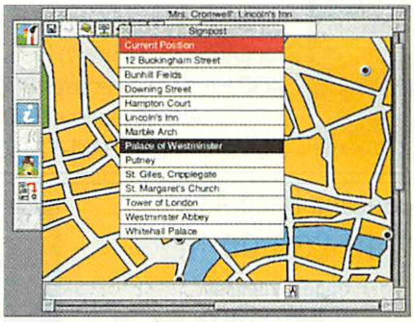
On this one short trail my small band of testers had to use their research, geographical and logical skills. The program lends itself to group working though enthusiasm can get a little noisy at times and you will have to work with them explaining the navigation as though there is interactive help it's a text-only facility.

The content and depth is quite excellent and definitely on a par with CSH's *Burns* and *Arthur* CD-ROMs. The photographs, portraits, engravings and original papers are superb. The additional feature of the people index allows you to find specific information on characters along with portraits, engravings or photographs of associated artefacts such as Oliver Cromwell's pomade chest presented to him by the Grand Duke of Tuscany.

In addition the timeline allows you to enter text which the program will search for. You are automatically given the whole of Oliver's life but you can move this Timeline to search only in a particular time frame such as 1604 to 1653. Successful searches result in a textfile of dates and places but unfortunately no links into the program. So entering *Dublin* will present you with the fact that in 1649 Cromwell was in Dublin between 15 and 31 August and there again in September and December.

Another nice tool is the Glossary which allows you to browse through words from *Agitators* to *Regicide*, from *Sequestration* to *Trained bands* or search for specific definitions. This glossary is also available as a separate textfile so you can add to it and use it away from its original CD-ROM setting.

In addition to the quests on offer, the CD-ROM holds a support file of Cromwell's speeches and letters, information on diverse groups such as the Fifth Monarchists, Clubmen, Mugglestonians, Seekers and Ranters as well as the better known sects such as the Levellers, Quakers, Baptists, Presbyterians, and



*You can get a list of clue locations*

Congregationalists – Cromwell's preferred group.

Included here is a glorious file of accounts of the day such as a letter from Captain Nathaniel Gordon telling in great detail about the fall of Helmsley Castle, a recipe for Cromwell's Cake, as well as information on embroidery, ranks, death masks, seals, tithes, and the origins of the Humpty Dumpty nursery rhyme among other snippets of information.

Add to this biographies of Charles I, Cornelius Vermuyden, Oliver Cromwell, and information from the pens of Thomas Carlyle, Milton and Samuel Pepys, details on how the army was organised, the curious names and forms of parliament tried, and how the trial and execution of Charles was managed.

There is no paper-based manual accompanying the CD-ROM though there is one on the disc which you can access on screen or print out as you prefer. Over 800 pictures, 100 cameos of personalities from the 16th century and more than 300 places to visit have been combined in a way that is both interesting and thought provoking. This is a brilliant resource and tool, and while it does lack some of the polish and visual appeal of *Frontier 2000* if you're doing any work on this period it's a must have. **END**

## Product details

| | |
|---|---|
| Product: | Oliver Cromwell |
| Price: | £49.95 |
| Ages: | 7+ |
| Supplier: | Cambridgeshire Software House, PO Box 163, Huntingdon, Cambs, PE17 3UR |
| Tel: | 01487 741223 |
| Fax: | 01487 741213 |
| E-mail: | cshsoft@compuserve.com |
| Web: | http://ourworld.compuserve.com/homepages/cshsoft |

# Rambles through Acorn World

## Mike Cook gets into plumbing

Spot the error in the December *Rambles*. When talking about a Risc PC I wrote "one was sent up to Saltair" however someone, who has not owned up yet, thought that the phrase sounded pretentious and changed it to "I was sent up to Saltair" – no need for that, I work there every day.

Just look and see all the experts in the Media saying that nothing happened with the Millennium Bug because we were all prepared – yeerr right.

Attending a seminar at the Epsom RISC OS '99 Show I was surprised to hear a well-known figure in the market talk about Acorn's past. Did you know the Electron could show twice the number of colours as a Model B? No, neither did I.

Maarten Ottens and Glenn Richards pointed out something I missed in the December issue, however in my defence I assumed that everyone would have upgraded their operating system by now:

**I "On the question from Chris Grant about fitting a bigger and/or second hard drive into his A5000 you answer: replacement is no problem, over 2Gb 'needs' partitioning, second one needs extra interface. Both are wrong, an A5000 doesn't recognise space above around 540Mb, so fitting a bigger hard drive is useless. And it is able to fit two hard drives. Just take an IDE cable for two devices and a power supply splitter. Don't know if the power supply is strong enough, but I think so.**

**"The limit on hard drive space was removed on RISC OS 3.6, you can soft-load the 3.6 filecore into 3.5, but not into 3.1, unfortunately. The best solution is for him to try and get hold of a second-hand 540Mb drive. Failing that, a large multi-Gb drive could be used with a Simtec or RapIDE card that supports partitioning, although pre-Risc PC compatibility with RapIDE would have to be checked. The Simtec card works perfectly however."**

Glenn Richards went on to give some advice about file types:

**I "Christopher Rayson mentioned file type problems with DOS disks. This is caused by Microsoft changing their own standards and not bothering to tell anyone (are you surprised?). Basically the 12-bit field in the file descriptor that stores the file type is now used for some other purpose. Files originating from DOS or Win3.1 systems will work fine, but *Win32* (95/98/NT) have changed the file descriptor format. There are two solutions:**

**"Firstly Warm Silence's *Win95FS*, which will show the correct filetypes, and will also display the hacky *Win32* long filenames – the drawback is that this costs actual money. The second (and far simpler) method is to select all the files and SetType them (using the Filer) to DOS, and let DosMap take care of it. A third way is of course to patch DOSFS so that it doesn't use filetypes at all, but relies entirely on the DosMap settings. RISC OS Ltd., are you listening?"**

Robin Hampshire wants to take on a really big project:

**Q "I live in a largish old farmhouse, and have been planning to install central heating for the past decade, but it's now coming together for the final version. However, straightforward central heating through a one or two channel timer is not good enough, hence the complication:**

**"What I plan to do is to have every room – up to 20 of them, allowing for expansion – on a separate channel and individually controlled through my Risc PC. The**

Guy Inchbald, guy@seedtech.co.uk has a few point to add on the 3in drive question:

**I "James Scott has three basic options to retrieve files from 3in Amstrad discs:**

**"Fit a second, 3.5in, drive to the PCW 8512, run 2-in-1 (under CP/M) which understands the MS-DOS disc format and copy the files across. If the layout of the text is not important *Locoscript 1.2* can convert the files in plain text form so no further conversion would be necessary. Otherwise, run *Locoscript PC* on one of his PC's (probably the Amstrad PC, in case the newer Cyrix cannot read the old low-density DOS format used by 2-in-1, otherwise a RISC OS machine can be used to convert DOS densities) to open the files and save them in a more common PC text format.**

**"Alternatively, Locomotive produced a cable and software to connect directly between PCW and PC. *Locoscript PC* would still be needed if the files were not exported as plain text. Locomotive Software are probably still in business – off the top of my head I think they changed their name to Locoscript Software a while ago. I doubt if anybody sells 3.5in drives for the PCW any more, though.**

**"The third option is to send me a copy on 3in disc, and I will convert the stuff for free – as long as there isn't too much of it."**

**savings in fuel costs should very quickly overtake any initial capital expenditure. If I get the front end right, and once family routines and habits have settled into the new system, there should never be more than two or three rooms needing to be heated at any one time, with all spare and unused rooms either off or on a reduced temperature.**

**"I might even get away with a much smaller boiler which, on its own, could pay for the extra control equipment. The plan is that each room is monitored by a temperature sensor with a motorised valve on its radiator. However, the boiler I plan to install is already fitted with its own single channel controller, which I would leave in position as it also controls the safety circuits. I would simply set it to continuous operation and let its own return water thermostat tell it whether to fire or not.**

**"The additional control for each channel would be through the Risc PC. A relatively simple Basic program will loop through each channel continuously, comparing the time of day with the preferred temperature against the actual temperature and set the radiator valve on or off as required.**

**"I can solve almost the whole system from each end but it doesn't quite meet in the middle. The plumbing side is OK. All the motorised valves, 240V, will run through relays whose coils can be chosen to suit the computer's output. I'm happy designing and implementing all that. Similarly, the temperature sensors can be sourced easily.**

**"I am confident about the front end. As my preferred programming language is S-Base, I would probably construct an application where each room or channel can be chosen from a graphical plan and each of its temperatures and time-bands can then be set. That program would output a data file for use by a continuously running Basic program which monitors and controls each channel in turn.**

**"We now get to the part where I need assistance, that is interfacing the two ends of the system. I am perfectly confident and competent at the plumbing, software and electric side of things, but not the electronics. I do know I could use the I2C bus though I don't really know what it is, where it is or how to go about using it, and I am aware that with a central heating system, no matter how many channels are involved, polling of each channel can take as long as the interface wants it to take without loss of efficiency.**

**"Due to the potential elegance of the final solution, and the considerable fuel savings possible over the years, I am very keen to bridge the interface gap and install such a system. Your advice would be very much appreciated."**

A Robin sent me this several months ago and we had a conversation over the merits of using an I2C temperature sensor and a PIC micro controller for each radiator. In that way the PIC could implement a real time clock in software and be independent from the main computer. Every PIC could then be connected to the computer's serial port and given an ID number. Then the computer would just sent this number along with when it wanted each temperature bands to apply.

However, I think this involved too much electronics for him, along with the fact that he would also have to write some I2C driver routines for the PIC. This is something I thought I would get down to using one day but so far I haven't. This month's "Run The RISC" article offers a much simpler solution. The available devices for the One Wire bus include a digital thermometer to take the temperature of the room and also an addressable switch to allow a solid state relay to be turned on and off.

It would only need one twisted pair cable to go round the rooms in turn tapping off the circuit for each room. If you want to give more autonomy to the circuits you could even use the One Wire thermostat that turns on and off at set temperatures with those being set by commands sent over the bus. In the coming months I will be exploring these devices but I think that this comes closest to meeting your needs.

Finally Joanne Woolf has a problem that might just provide a business opportunity for someone:

**Q "A friend of mine has a recording of music on cassette (her own recording of amateur performance), which she would like transferred onto CD. Is there a company out there which offers this kind of service and where could we contact them to find out the cost?"**

A Don't know, any offers?

END

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# All aboard the one wire bus

*Mike Cook reveals a new way to control*

To start a new year/century/millennium I thought I would take a look at a new kind of bus, one that I have not touched upon before. This is the One Wire bus used by the manufacturer Dallas and is not entirely a stranger to Acorn computers but to date has been buried in the innards of some machines. You might know that some models of computer contain a unique serial number, this is provided by a Dallas chip and is extracted using their One Wire bus. There are also several other useful chips that use the same bus so I would like to explore what they can do for us.

Now a bus is a collection of wires that carry information, I first learnt my electronics in Oldham and for years I thought this was called a "buzz". One of the distinguishing features of a bus is how many wires it uses to carry the information, this can be as many as 64 in certain varieties of SCSI – but I think one is as low as you can go. The I2C bus uses two signal lines but add earth and power, and you have four wires. The name One Wire bus is a bit of a cheat really because you need two, one signal and one earth. Still, it is much easier running a twin flex about a house than a four wire cable. And that's really what this bus is all about, easy remote interfacing, even the power is carried along the two wires so let's delve in and see what it's made of.

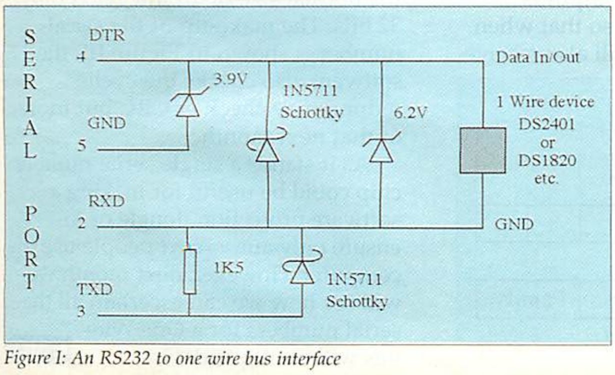



*Figure I: An RS232 to one wire bus interface*

The bus is designed to have one master in control of everything and a number of slaves, in theory this can be up to 2^48 which is a ridiculously large number. This allows each device manufactured to have its own guaranteed unique address or identification number. The maximum length of the bus and number of devices it can hold are dependent on many factors, but using a simple twisted pair, 100 meters length of cable with 150 devices has been made to work, and, with a few tricks this can be extended to 300 meters with 500 devices.

I suppose in a way the bus works rather like Morse code, which uses dots and dashes or short and long pulses. Similarly this bus works by the master sending out different length pulses and the slaves responding. The idea is that the bus is normally high, that is, at a logic one output voltage and it is pulled low by the master for a certain length of time. Then a slave may respond by pulling the bus low again, and the bus is constructed so that more than one slave can pull the bus low at the same time. Of course the master can't immediately tell what slave is pulling the bus low, that's where the protocol part comes into play. Basically there are three lengths of pulses that do all the work. The first is a long one, when a device sees that it performs an internal reset and it also signals its presence by pulling the line low some time after, rather like putting your hand up in class. A short pulse indicates the master wants to write a logic one and a slightly longer one, but much shorter than the reset pulse, indicates that the master wants to write a logic zero.

When it comes to reading data from the bus, any slave device knows, from what has gone on before, when it is their turn to talk. When it is, and it sees a logic one being written by the master, it will pull the line low to indicate it wants to send back a logic zero, or it leaves the line high to indicate it wants to write a logic one. So you can see that the protocol dictates that communication happens one bit at a time. The time between bits doesn't matter and so apart from the timing of the pulses, data can be gathered at any speed. This means that the protocol can be easily written in a high level language without the worry of timing.

A typical transaction goes like this:

- Send out a reset pulse;
- Receive an answer showing that at least one device is on the line;
- Send the identification number of the device you want to interact with;
- Send a command to that device;
- Read or write to the device.

This implies that you know the identification number in the first place and there are ways of finding this out by software. However, the simplest situation is when there is only one device on the bus, by issuing a "Read ROM" command the next 64 bits read back are that

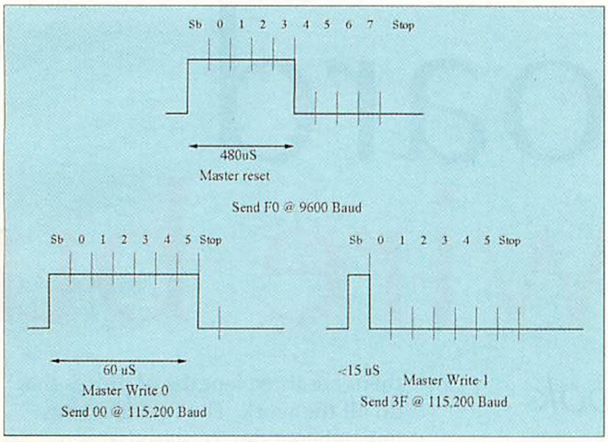


*Figure II: Generating the one wire pulses*

device's ID number. With more than one device on the bus they will all talk back at once and the numbers you get back will be a logical AND of all the device ID numbers, which is of no use at all. There is a way of untangling this mess and getting all the numbers separately but that will have to wait until next month.

For this month let's see how we can talk to these devices. We could use the printer port and generate the pulses we need in software, however this would need some tight timing routines and a bit of machine code. The problem with tight timing is that the loop parameters used vary depending on the processor and computer model type, it's best to let the computer do the timing for us.

One such system is the serial port, timed pulses are produced independent of the computer model. By choosing the right baud rate and bit pattern to send to the serial port we can generate the pulse widths we need. However, unfortunately this only applies to those who have RISC OS 3.5 and above but if you have an older machine not to worry I will look at a printer port solution another month.

The RS232 serial port produces +/– 12 volts as its signal and a first glance would suggest that this is the wrong way up, that is it produces a – ve voltage when the line is not active and a +ve one when it is. Now voltages are more accurately described as potential differences and that's the point. Most of the time we measure these with respect to earth and call them absolute voltages but more accurately we have a signal and a reference point.

If we treat the output voltage of our serial port as the signal return and the ground connector as the signal then suddenly the voltages are the right way up. We have what is called a floating signal return path – one that is not tied to ground, we can use this state to drive our bus.

Figure I shows how this can be done: Basically we have diodes to prevent over-voltages reaching the device, you will see a 5.7 volt zener diode across the bus to prevent the voltage rising above that level and across this is a diode to stop the bus voltage going negative. Now you may not have see this diode symbol before, it is a Schottky diode and it is being used here because it has a low turn-on voltage, typically 0.3V as opposed to the normal 0.7V. This means it starts to conduct before the reverse-biased bus device does. You can't put normal diodes in here because it simply won't work.

The resistor is used to limit the current when the bus is pulling up, this is sufficient for supplying extra current for devices like thermometers. Otherwise they would have to have a separate supply. It is worth noting that with a floating ground circuit like this you can't use an external supply on this bus. You will see that the serial output is connected to the input so that when you send a byte you will also receive one. If nothing happens to pull the bus down the byte you send will be the one you receive, but if a device pulls down the bus during the time the serial word is being output you will get something different back from the serial port. This is how you know that a One Wire bus device has responded to the signal you sent.

Now, because of the big difference between a reset pulse and the others you need to run the serial port at two different rates depending on what you are doing. For the reset you need to run it at 9600 baud and for reading and writing you need 115,200 baud, unfortunately you can only get this high speed with version 3.5 of the operating system. Figure II shows you the timing you get with this circuit. You will see at the high speed we are running the serial port with a configuration of 6 data bits, I believe this is the first time this feature has been used on a RISC OS computer.

Let's see how to use this in practice, first you will need a One Wire bus device connected to the bus, serial number parts are the cheapest to experiment with, I used a DS2401. The software *Test1* in the *1_Wire* folder will just generate a reset pulse and look for a device responding. If it sees the same bit pattern as it sent out it will conclude there is no device on the line and, if it doesn't get a byte back at all, it will conclude there is no interface fitted.

The software *Test2* goes one step further by reading the actual device serial number. It is built on the previous test but once active devices are found the baud rate is changed and a "Read ROM" command is given. The 64-bit serial number is read in as eight bytes stored in an array variable.

This is perhaps the simplest way of dealing with a 64-bit number as the normal size of an integer is only 32 bits. The make-up of the serial number is shown in Figure III, the software also checks the cyclic redundancy check or CRC but more of that next month.

As it stands a single serial number chip could be useful for making a software protection dongle or to ensure only authorised people use the computer. However, next month we will see how we can ascertain all the serial numbers for a One Wire bus with multiple devices. END

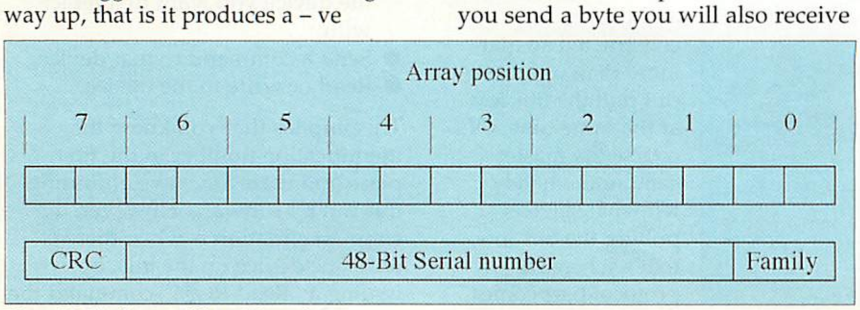


*Figure III: The format of the serial number*

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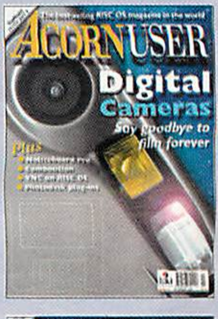
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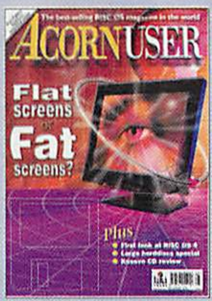
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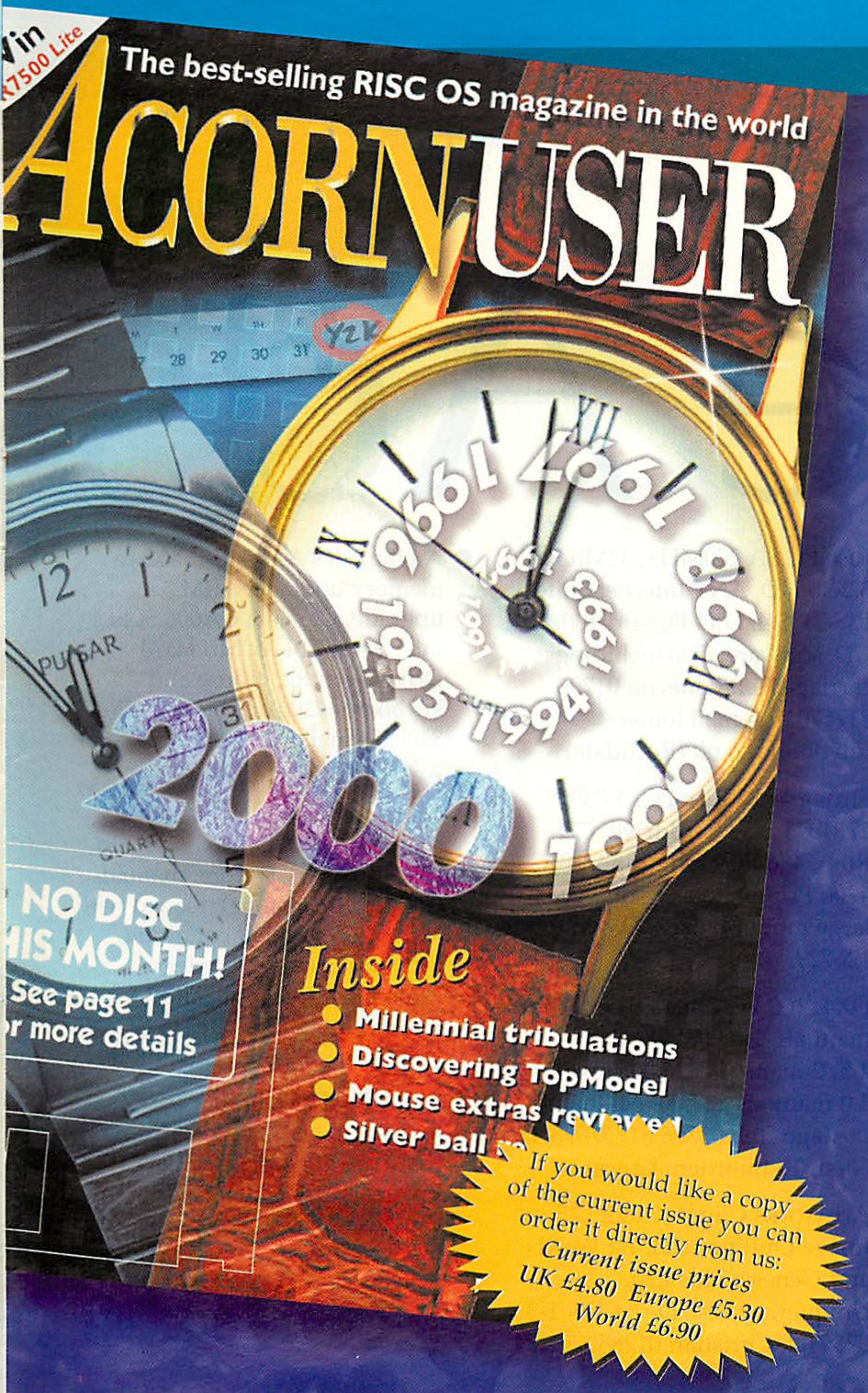

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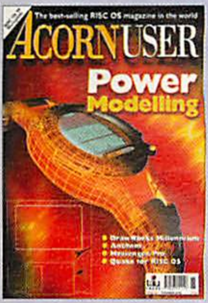
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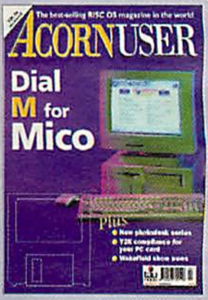

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# Too rosy a future

Am I the only one who does not see RISC OS 4 through rose-tinted spectacles?

I have upgraded my Risc PC 600 to RISC OS 4 in order to have a larger harddisc (so I'm not using floppies for storage) and also to fit a PCcard so I can take advantage of some software not available on the RISC OS platform.

Now I find some of my original programs are not running and a couple of newer ones have niggardly faults, some of which come up when trying to do the simplest things – like shutting down. I now know where the reset button is because I've had to use it so much recently.

I didn't get the *Taborca* application with my copy and I have written to RISCOS Ltd but to no avail – which is unusual for a RISC OS supplier.

Judging by the huge list of programs that don't work according to Paul Johnson's list I was wondering whether RISC OS 4 is not the saviour but another nail in the coffin.

*Mr A. J. Hardwick*
*Surrey*

*While you have clearly had some problems the situation is nowhere near as black as you paint it. There are always compatibility issues when the operating system is upgraded and the problems with RISC OS 4 are nothing in comparison to the StrongARM upgrade. The majority of popular applications work.*

*I do suspect, as you did not give an e-mail address in your letter, that you have missed out on the upgrades and patches available via the RISCOS Ltd Web site (Taborca, for example, was made available that way), and those on third party sites for particular applications that need some upgrading.*

*Clearly RISCOS Ltd should have replied to your letter, assuming they received it, but the work they have done and are doing is invaluable to the future of the market.*

## Mac conversions

The recent articles about networking Acorns together with PCs have been interesting but with the rise of the iMac I was wondering if you were going to do anything networking Apple machines and converting Mac format files.

*Stewart Liles*
*West Yorkshire*

*The reason we haven't covered it, apart from the fewer numbers of Apple machines relative to PCs, but since you've asked:*

*The latest version of Spacetech's* Photodesk *saves its files in the same format as Adobe* Photoshop *and various bitmap formats can be moved between the machines,* ImageFS *from Alternative Publishing is good for these.*

Artworks *can output in Adobe* Illustrator 3.0 *format which, with a bit of jiggery-pokery, will load into more recent versions of* Illustrator*, Cerilica* Vantage *will hopefully have conversion facilities too, it will certainly do proper EPS files with preview.*

*Obviously raw text can be converted easily, while here at Tau Press we have a custom-written program that converts* Impression *DDF files to something that Quark* Xpress *can happily import, with styles.*

*For text and DTP not much exists, although* TechWriter *will load Mac* Word *files (version 6, 7 and 8 – Office 97 and Office 98), going the other way isn't a problem either, Icon Technology are working on a file-compatible Mac version. Softease's* TextEase *will be available in a file-compatible Mac version soon.*

*Direct networking is another matter, there is an Appletalk networking stack in beta form but it's not without it's own problems and only allows the RISC OS machines to see the Apple mounts, not the other way. Plus it should be possible to use the Samba protocol to talk though we haven't tried that here.*

*So there's your answer.*

## Correction

In my review of Irlam's *i16* (November issue, page 56) I wrote "steady tones, . . theoretically require sampling at three times their maximum frequency". This statement appeared a few years ago in the letters page of a respected journal, and was not challenged in subsequent issues. Unfortunately it is wrong – in fact the highest sampling frequency needed is fractionally greater than twice the highest frequency to be sampled, regardless of waveform. My apologies – I should have checked the reference before quoting it.

*Trevor Attewell*

## Flat screen warning

Although we reviewed Apple flat screens in the September 1999 issue, recent hardware changes have meant that they can no longer be used with RISC OS machines. We'll keep you posted.

Contacting AU

letters@acornuser.com



Roy Heslop

Roy Heslop is a man who is never short of words. He's an interviewer's dream; you just sit him down in a corner and he gives you hours of material. The only hard part is getting him to talk about himself and not his passion for RISC OS machines.

> Even in the early days of the StrongARM Risc PC we always had problems with supplies.

'Head geezer,' jokes Roy when I enquire if he has an official title. 'With setting up RiscStation, we have essentially done what was planned years ago. I don't know whether people know this but I had been bothering Acorn for about six years, maybe more.

Even in the early days of the StrongARM Risc PC we always had problems with supplies. We decided that it was possible to take alternative paths ourselves for some of the products but Acorn was just not interested.

'Acorn wanted to do it all itself and did not seem to be interested in it if it was an expanding market or a different market which attracted different people. So really we are now just doing something which we wanted to do for years.

'I think three years ago Acorn should have opened its doors and sold RISC OS like Windows is sold. It could have set up a side division like it did with ARM Ltd and it could have started selling exactly the same way that RISCOS Ltd is doing. I feel sorry that RISCOS Ltd did not manage to pick up the whole blooming shebangle.'

After 'screwing up' his A levels Roy was sponsored by Marconi to do an HNC, by the end of which he was bored of the education thing and wanted to earn money. He started off in electronics with microprocessors as a sideline, but by then he was getting more heavily into the computing. He got a job in the process control side of the company and was a bit of a high flyer; eventually he went into country-wide servicing.

'One year I did 32,000 miles in the company car, and 50,000 miles on three of my then seven classic motorbikes (I calculated that I'd been on the road for most of the year). Kim who later became my wife persuaded me that I did not need seven all at once.

'At the moment I just have the one, which is in a corner waiting to be fixed but with a house, two children, two businesses, and working 12-16 hours a day there is not enough time for it. I will not part with it, it is a symbol of my youth which I would like to re-capture. I think it is a case of the mind says 19 and the body says not.'

Roy started his first retail business venture (Kimberley Computer Services) through Birchwood computer club, where his first home computer had been a six-foot-high 18-inch rack cabinet. Kimberley all started through buying bulk floppy discs and selling them in small outers. Through the quality of the discs and their price, word soon got around to school teachers. Roy progressed to other consumables.

'My wife at this time had just had a baby and got fed up with nothing to do. So we set up a mail order company that did not advertise much. Basically we went to a few computer shows and sold a few bits and bobs.

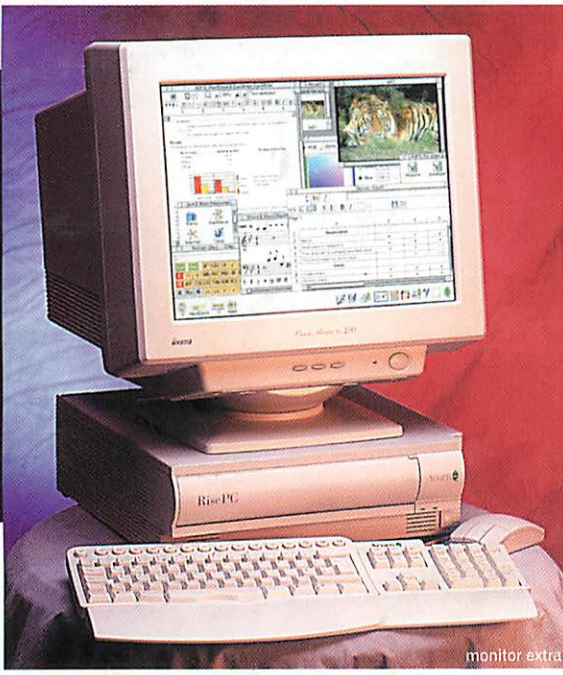
Computer shows were just starting at the time; it was before the cowboys got in, and it was all trestle tables. We sold stuff and handed out leaflets and sent leaflets out to our local school and that is really when we got going and Kimberley was born.'

Roy had left Kimberley under unpleasant circumstances, with both Roy and his wife close to a nervous breakdown. CTA Direct was set up on a shoestring to be mail order because Roy was bored but had had enough of the retail trade.

RiscStation is new ground, though. Even with all of Roy's experience RiscStation has been a huge learning curve for all involved, especially the problems with the PCI card which set them back. There were people who were worried that CTA was going to sell all the RiscStations cheaper and make a quick killing, but Roy knows he needs dealers. Having been on the receiving end of Acorn's attitude he's in no hurry to dish that same attitude out to others.

*Jill Regan*

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